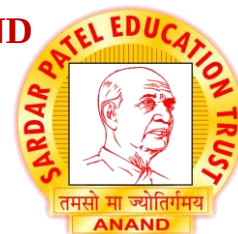




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Revised Syllabus as per NEP 2020 with effect from the Academic Year 2026-2027

POST GRADUATE DIPLOMA IN COMPUTER APPLICATION

Semester – I

Course Code	PGDCAN1C04	Title of the Course	DATABASE MANAGEMENT SYSTEM
Total Credits	04	Hours per Week	04 Hours / Week

Course Learning Outcomes (CLOs)

CLO 1	Understand the fundamentals of Database Management Systems (DBMS), data models, database architecture, database users, database languages, and the advantages of database systems over file-based systems.
CLO 2	Applying normalization techniques, and enforcing integrity constraints.
CLO 3	Develop and manipulate relational databases using SQL, including DDL, DML, DCL, Transaction Control Language (TCL), joins, subqueries, views, indexes, and aggregate functions.
CLO 4	Analyze database transaction management, concurrency control, recovery techniques, security mechanisms, and apply database design principles to develop efficient, secure, and reliable database applications.

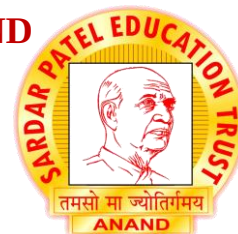
Course Content

Unit No.	Description	Weightage (%)
1.	Relational model • Relational model concept • E-R diagram and its conversion to relations • Normalization • Introduction to transactions • Concurrent access to database and related problems • Introduction of Locking techniques	25%
2.	SQL • Datadefinition, queries, grouping and ordering • Insert, Delete, Update • Constraints: Primary key and Foreign key • Built-in functions	25%
3.	Procedural Language-I • Data types • variables and constants	25%



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	• Assignment • Conditional controls • Iterative control and display messages	
4.	Procedural Language-II • Introduction of Implicit and explicit cursors and its attributes • Exceptional handling • Procedures • Functions • Introduction to Triggers	25%

Teaching – Learning Methodology

The course would be taught / learnt through ICT (e.g. Power Point Presentation, Audio-Visual Presentation), Lectures, Quizzes, Assignments, Case Study and Browsing E- Resources & Practical Learning.

Examination Evaluation Pattern

Sr. No.	Particulars	Weightage (%)
01	Continuous and Comprehensive Evaluation (CCE) (Formative Assessment)	50%
02	Semester End Evaluation (SEE) (Summative Assessment)	50%
	TOTAL	100%

Specifications for CCE and SEE

Sr. No.	Details of the Evaluation Pattern	Marks
01	Continuous and Comprehensive Evaluation (CCE) (Formative Assessment)	
	A Assignments	10
	B Multiple Choice Questions	05
	C Attendance	05
	D Written Examination (01 Hour)	30
	(Formative Assessment) (A + B + C + D)	50 Marks
02	Semester End Evaluation (SEE) (Summative Assessment)	
	E Written Examination (02 Hours)	50 Marks
	TOTAL(For 04 Credit Courses)	100 Marks

Rubrics – Based Assessment for Assignments (10 Marks)

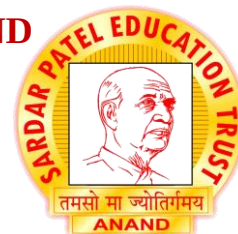
Excellent	09 – 10 Marks	Assignment demonstrates comprehensive understanding of networking concepts. Content is accurate, well-organized, and supported with appropriate examples, diagrams, and references. Presentation is neat, original, and submitted on time.
Good	07 – 08 Marks	Assignment demonstrates good understanding of the topic with



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		minor errors or omissions. Content is organized and relevant, with adequate examples and diagrams. Presentation is clear and timely.
Average	05 – 06 Marks	Assignment covers basic concepts but lacks depth or contains some inaccuracies. Organization is satisfactory with limited supporting examples or diagrams. Presentation needs improvement.
Basic	03 – 04 Marks	Assignment shows limited understanding of the topic. Content is incomplete, poorly organized, and contains several errors. Few or no supporting examples are provided.
Poor	01 – 02 Marks	Assignment demonstrates minimal effort and understanding. Content is largely irrelevant, inaccurate, or copied. Presentation is inadequate.
Below Poor	Zero Marks / NA	Assignment not submitted, plagiarized, or does not address the assigned topic.
Note: Assignments may be taken in forms of written project, computerized and online suggested courses / certificates as per the decision made by the respective faculties of the courses.		

Rubrics – Based Assessment for Multiple Choice Questions (05 Marks)		
05 Multiple Choice Questions – 01 Mark Each (05 Marks)		
Excellent	01 Mark	The chosen option is correct, no errors in response
Below Poor	Zero Marks / NA	Chosen option is incorrect, completely irrelevant, multiple options chosen / Not Attempted

Rubrics – Based Assessment for Attendance (05 Marks)		
As per the Rules and Regulations provided by the Academic Section of Sardar Patel University, Vallabh Vidyanagar, for the students studying in all departments and colleges. Reference No.: E – 3 / 3127; dated: 07-03-2024. https://www.spuvvn.edu/orbit-cdn/uploads/circulars/Circular-NEP-InternalExamMarks-March-April24.pdf		
Excellent	05 Marks	More than 90% (Minimum 54 Hours for 04 Credits Courses)
Good	04 Marks	80% - 89% (48 to 53 Hours for 04 Credit Courses)
Average	03 Marks	70% - 79% (42 to 47 Hours for 04 Credit Courses)
Poor	Zero / NA	Less than 70% (Less than 42 Hours) (NOT ELIGIBLE TO



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		APPEAR FOR EXAM)
Note: Students with below 70% of attendance must submit their written application to their respective class coordinators with genuine reasons and evidence (in case of working or medical emergencies). Students must not pursue dual degree programmes that clash with the college's timings.		

Rubrics – Based Assessment for Mid-Semester Examination (30 Marks)		
Any Two Unit or 50% of The Syllabus - 15 Marks Each Question		
Excellent	13 – 15 Marks	Accurate, error-free, logically presented, timely submission
Good	10 – 12 Marks	Minor errors and good conceptual clarity
Average	07 – 09 Marks	Basic understanding or partially correct
Basic	04 – 06 Marks	Limited clarity, noticeable mistakes, incomplete content
Poor	01 – 03 Marks	Inadequate conceptual clarity, incorrect content
Below Poor	Zero Marks / NA	Content is irrelevant / Not Attempted / Not Submitted
Note: Written Examination questions will be based on various levels of Revised Bloom's Taxonomy.		

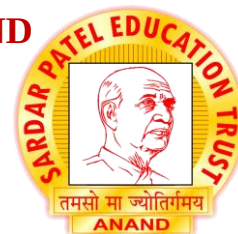
Rubrics – Based Evaluation Pattern for End-Semester Examination (50 Marks)		
06 Multiple Choice Questions – 01 Mark Each (06 Marks)		
Excellent	01 Mark	The chosen option is correct, no errors in response
Below Poor	Zero Marks / NA	Chosen option is incorrect, completely irrelevant, multiple options chosen / Not Attempted
Short Question (12 Marks) – 6 Question from all Units		
Excellent	02 Marks	Demonstrates accurate understanding of concepts related to questions. Provides correct and clear explanations with complete answers.
Good	01 Mark	Shows partial understanding of concepts with some correct steps or explanations. Minor errors or incomplete answers may be present.
Poor	00 Mark	Incorrect, irrelevant, or no response provided.
UNIT I - 08 Marks Each Question		



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Excellent	06 – 08 Marks	Demonstrates comprehensive understanding of the Relational Model , including relational model concepts, E-R diagrams and their conversion to relations , normalization, transactions, concurrent database access and related problems, and locking techniques.
Good	04 – 06 Marks	Demonstrates good understanding of relational database concepts with minor errors. Covers most topics including normalization, transactions, concurrency, and locking with relevant examples and explanations.
Average	03 – 04 Marks	Demonstrates basic understanding of relational model concepts but lacks clarity or completeness. Some important concepts such as normalization, concurrency control, or locking techniques are missing or partially explained.
Basic	02 – 03 Marks	Limited understanding of relational database concepts. Answer is partially correct with inadequate explanation, incorrect relation conversion, or missing normalization steps.
Poor	01 – 02 Marks	Minimal understanding of the topic. Answer contains major conceptual errors and lacks relevant database concepts or examples.
Below Poor	Zero Marks / NA	Question not attempted, irrelevant answer, or copied content without understanding.

UNIT II - 08 Marks Each Question

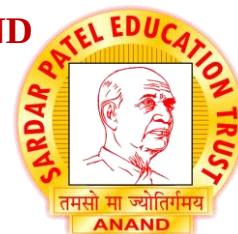
Excellent	06 – 08 Marks	Demonstrates comprehensive understanding of SQL , including data definition (DDL), queries, grouping and ordering, INSERT, UPDATE, DELETE , primary key and foreign key constraints, and built-in functions.
Good	04 – 06 Marks	Demonstrates good understanding of SQL statements with minor syntax or logical errors. Includes relevant examples for DDL, DML, constraints, and functions.
Average	03 – 04 Marks	Demonstrates basic understanding of SQL concepts but lacks complete query logic or proper syntax. Some important SQL commands or constraints are missing.
Basic	02 – 03 Marks	Limited understanding of SQL. Queries are partially correct with inadequate explanation or incorrect syntax.
Poor	01 – 02 Marks	Minimal understanding of SQL. Answer contains major syntax errors and lacks relevant SQL concepts.
Below Poor	Zero Marks / NA	Question not attempted, irrelevant answer, or copied content without understanding.



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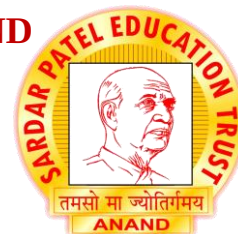
UNIT III - 08 Marks Each Question		
Excellent	06 – 08 Marks	Demonstrates comprehensive understanding of Procedural Language-I , including data types, variables, constants, assignment statements, conditional controls, iterative controls, and display messages.
Good	04 – 06 Marks	Demonstrates good understanding of procedural programming concepts with minor errors. Includes relevant examples and correct use of control structures.
Average	03 – 04 Marks	Demonstrates basic understanding of programming concepts but lacks clarity or complete program logic. Some important control statements or syntax are missing.
Basic	02 – 03 Marks	Limited understanding of procedural programming. Programs are partially correct with inadequate explanation or incorrect syntax.
Poor	01 – 02 Marks	Minimal understanding of the topic. Answer contains major programming errors and lacks relevant concepts.
Below Poor	Zero Marks / NA	Question not attempted or answer is irrelevant.
UNIT IV - 08 Marks Each Question		
Excellent	06 – 08 Marks	Demonstrates comprehensive understanding of Procedural Language-II , including implicit and explicit cursors with attributes, exception handling, procedures, functions, and triggers.
Good	04 – 06 Marks	Demonstrates good understanding of PL/SQL concepts with minor errors. Includes relevant examples of cursors, procedures, functions, exception handling, and triggers.
Average	03 – 04 Marks	Demonstrates basic understanding of procedural language concepts but lacks clarity or complete program logic. Some important concepts such as cursors or exception handling are missing.
Basic	02 – 03 Marks	Limited understanding of PL/SQL programming. Programs are partially correct with inadequate explanation or incorrect syntax.
Poor	01 – 02 Marks	Minimal understanding of the topic. Answer contains major programming errors and lacks relevant PL/SQL concepts.
Below Poor	Zero Marks / NA	Question not attempted, irrelevant answer, or copied content without understanding.
Note: - Multiple Choice Questions of 10 Marks will be based on various levels of Revised Bloom's Taxonomy. - Written Examination questions will be based on various levels of Revised Bloom's Taxonomy.		



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PLO – CLO Mapping								
DATABASE MANAGEMENT SYSTEM								
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8
CLO 1	3	3	2	1	0	0	0	1
CLO 2	3	3	3	2	0	0	0	1
CLO 3	3	3	3	2	1	0	0	1
CLO 4	3	2	2	2	1	0	0	1
Note: High: 03 ; Moderate: 02 ; Low: 01 ; No Mapping: 00								

Suggested References and E-Resources for Further Reading
Elmasri And Navathe: Fundamentals of Database Systems, Addison-Wesley Publishing Co. 1994.
John G. Hughes: Database Technology A Software Engineering Approach, Prentice Hall International Series 1993.
Ivan Bayross: SQL, PL/SQL BPB Publications. 2009
https://www.tpointtech.com/dbms-tutorial
DBMS Tutorial
