

**SWARNANDHRA
COLLEGE OF ENGINEERING AND TECHNOLOGY
(AUTONOMOUS)**

SEETHARAMPURAM, NARSAPUR-534280, WG- DT, AP

DEPARTMENT OF BACHELOR OF COMPUTER APPLICATIONS(Honours)

TEACHING PLAN

Course Code	Course Title	Year / Sem.	Branch	Contact Hr/ week	Academic Year
24BC3L03	DATABASE MANAGEMENT SYSTEMS LAB	II/III	BCA	3	2026-27

Course Objectives:

This Course will enable students to

- Populate and query a database using SQL DDL/DML Commands
- Declare and enforce integrity constraints on a database
- Writing Queries using advanced concepts of SQL
- Programming PL/SQL including procedures, functions, cursors and triggers

Course Outcomes (Cos): At the end of the course, student will able to

CO No	Course Outcome	Knowledge Level (K)
CO1	Understand and implement the fundamentals of SQL including creation, alteration, deletion of tables, constraints, data manipulation, and retrieval of data using SQL commands.	K2
CO2	Apply SQL concepts to write queries using joins, subqueries, aggregate functions, views, conversion functions, string functions, and date functions for database operations.	K3
CO3	Analyze and develop PL/SQL programs using control structures, loops, exception handling, COMMIT, ROLLBACK, SAVEPOINT, and conditional statements for problem-solving.	K4
CO4	Develop database applications using PL/SQL procedures, functions, cursors, parameter passing, and error handling techniques.	K3
CO5	Design and implement advanced database programming concepts such as triggers (BEFORE, AFTER, INSTEAD OF), cursor management, and stored program units to automate database operations.	K4

S.No	Program	Proposed Number of Labs
1	Experiment 1: Creation, altering and dropping of tables and inserting rows into a table (use constraints while creating tables), examples using SELECT command.	1
2	Experiment 2: Queries (along with sub Queries) using ANY, ALL, IN, EXISTS, NOTEXISTS, UNION, INTERSET, Constraints. Example: Select the roll number and name of the student who secured fourth rank in the class.	1
3	Experiment 3: Queries using Aggregate functions (COUNT, SUM, AVG, MAX and MIN), GROUP BY, HAVING and Creation and dropping of Views.	1
4	Experiment 4: Queries using Conversion functions (to_char, to_number and to_date), string functions (Concatenation, lpad, rpad, ltrim, rtrim, lower, upper, initcap, length, substr and instr), date functions (Sysdate, next_day, add_months,	1
5	Experiment 5: i. Create a simple PL/SQL program which includes declaration section, executable section and exception –Handling section (Ex. Student marks can be selected from the table and printed for those who secured first class and an exception can be raised if no records were found) ii. Insert data into student table and use COMMIT, ROLLBACK and SAVEPOINT in PL/SQL block.	1
6	Experiment 6: Develop a program that includes the features NESTED IF, CASE and CASE expression. The program can be extended using the NULLIF and COALESCE functions.	1
7	Experiment 7: Program development using WHILE LOOPS, numeric FOR LOOPS, nested loops using ERROR Handling, BUILT –IN Exceptions, USE defined Exceptions, RAISEAPPLICATION ERROR.	1
8	Experiment 8: Program development using creation of procedures, passing parameters IN and OUT of PROCEDURES.	1

9	Experiment 9: Program development using creation of stored functions, invoke functions in SQL Statements and write complex functions.	1
10	Experiment 10: Develop programs using features parameters in a CURSOR, FOR UPDATE CURSOR, WHERE CURRENT of clause and CURSOR variables.	1
11	Experiment 11: Develop Programs using BEFORE and AFTER Triggers, Row and Statement Triggers and INSTEAD OF Triggers	1

Text Books/Suggested Reading:

1. Oracle: The Complete Reference by Oracle Press
2. Nilesh Shah, "Database Systems Using Oracle", PHI, 2007
3. Rick F Vander Lans, "Introduction to SQL", Fourth Edition, Pearson Education, 2007

Y. Sai Suresh
Faculty

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Head of the Department

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Principal