

		Theory	Practical	Tutorial	Theory	TW/Practical	Tutorial	Total
ITL303	SQL Lab	--	2	--	--	01	--	01

Subject Code	Subject Name	Examination Scheme						
		Theory Marks				Term Work	Oral & Practical	Total
		Internal assessment			End Sem. Exam			
		Test 1	Test2	Avg. of 2 Tests				
ITL303	SQL Lab	--	--	--	--	25	25	50

Course Objectives: Students will try:

1. To provide a sound introduction to the creation of problem statements from real life situations.
2. To give a good formal foundation on the relational model of data and usage of Relational Algebra.
3. To introduce the concepts of basic SQL as a universal Database language.
4. To enhance knowledge to advanced SQL topics like embedded SQL, procedures connectivity through JDBC.
5. To enable the design of an efficient database using normalization concepts.
6. To enable students to be create indexes for databases for efficient retrieval.

Lab Outcomes: Student should be able to:

1. Construct problem definition statements for real life applications and implement a database for the same.
2. Design conceptual models of a database using ER modeling for real life applications and also construct queries in Relational Algebra.
3. Create and populate a RDBMS, using SQL.
4. Write queries in SQL to retrieve any type of information from a database.
5. Analyze and apply concepts of normalization to design an optimal database.
6. Implement indexes for a database using techniques like B or B+ trees.

Hardware Requirement: PC i3 processor and above	Software requirement: Any SQL Compiler
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Pre requisite: C Programming Language

Detailed syllabus:

Sr. No.	Detailed Content	Hours	LO Mapping
1	a) Students to be given assignments to construct detailed problem definitions for real life applications. b) Construction of ER/EER diagrams for the given problems. c) Assignment based on relational Algebra	4	LO 1 LO 2
2	a) Basic SQL Queries- DDL and DML. b) Construction of Database-Keys c) Population of the database	5	LO 3
3	Complex Queries using group by, nested queries, recursive queries, joins, views, Triggers, Cursors	5	LO 4
4	Design and Implementation of a fully fledged Database with front end for a real life application (Using JDBC)	4	LO 1
5	Assignment for conversion of relation to different normal forms.	2	LO 5
6	Program for construction of index-B-Tree /B+-Tree	4	LO 6

Text Books:

1. SQL The Complete Reference, 3rd Edition, James R Groff, Paul N. Weinberg, Andy Oppel, McGraw Hill.
2. G. K. Gupta: "Database Management Systems", McGraw– Hill

References:

1. Korth, Silberchatz, Sudarshan, "Database System Concepts", 6th Edition, McGraw–Hill
2. Raghu Ramkrishnan and Johannes Gehrke, "Database Management Systems", TMH

Term Work:

Term Work shall consist of atleast 10 to 12 practical's based on the above list. Also Term work Journal must include atleast 2 assignments.

Term Work Marks: 25 Marks (Total marks) = 15 Marks (Experiment) + 5 Marks (Assignments) + 5 Marks (Attendance)

Oral & Practical Exam: An Oral & Practical exam will be held based on the above SQL syllabus.