RDBMS with SQL (BIT-245) Micro Syllabus

S.N.	CONTENT
1	INTRODUCTION
	• The SQL Language • The Role of SQL • SQL Success Factors - Official SQL Standards - Microsoft Support - Relational Foundation - Complete Database Language - Client/Server Architecture - Retrieving Data - Creating a Database
2	RELATIONAL DATABASES
	• Early Data Models - File Management Systems - Hierarchical Databases - Network Databases • The Relational Data Model - The Sample Database - Tables - Primary Keys - Relationships - Foreign Keys • Codd's 12 Rules for Relational Databases
3	RETRIEVING DATA
	• SQL Basics - Name: Table Names, Column Names - Data Types - Constants • Simple Queries - The SELECT Statement: The SELECT Clause, The FROM Clause - Multi-table Queries (Joins) - Duplicate Rows - Row Selection - Search Conditions - The Comparison Test (= , < , > , <= , >=) - The Range Test (BETWEEN) - The Set Membership Test (IN) - The Pattern Matching Test (LIKE) - The Null Value Test (IS NULL) - Compound Search Conditions (AND, OR, and NOT) - Sorting Query Results (ORDER BY Clause)
4	RELATIONAL ALGEBRA – THE FOUNDATION
	• Introduction

	• Operators - Select - Project - Rename - Union - Intersection - Minus - Cartesian Product - Theta Join - Equijoin - Natural Join - Division • Relations and Predicates • Relational Operators and Logical Operators • JOIN and AND • RENAME • Projection, Restriction, and AND • UNION and OR • Database Updates • Data Integrity • Transaction Processing
5	DATABASE DESIGN – JOIN NORMALIZATION
	• Introduction • Creating a Database • SQL Security • Avoiding Redundancy • Join Dependency • Normalization up to BCNF • Surrogate Keys • Entity Relationship (ER) Modelling • What is Type?
6	DATA MODELS
	• The Entity Relationship Model • Advantages and Disadvantages of ER Data Model

7	SQL TODAY AND TOMORROW	8		
	• Database Processing and Stored Procedural SQL • SQL and Data Warehousing • SQL and Application Servers • SQL and XML • Database Market Trends - Enterprise Database Market Maturity - Software – as – a – Service (SaaS) - Database Server Appliances - SQL Standardization • SQL in Next Decade - Distribute Databases - Massive Data Warehousing for Business Optimization - Embedded Databases - Cloud Based and Horizontally Scalable Databases		1.00 1.00 1.00 1.00 2.00 2.00	
TOTAL CLASSES		**45 Hours**		