SQL
(Structured Query Language)
SYLLABUS COPY

Engineered for skill enhancement.

PROGRAM HIGHLIGHTS

Accredited Certificates :
✓ Program approved ISO Certification
Internships :
✓ Industry-relevant opportunities provided-
Placement Assistance :
✓ Career guidance from industry experts-
Basic to Advanced Level Training :
✓ Learn from experienced AI professionals .
Live & Recorded Lectures :
✓ Flexible learning at your convenience .
Real-Time Projects :
✓ Hands-on minor & major projects

ABOUT US

- **OUR MISSION :**

    Nxt Sync is a pioneering EdTech company committed to bridging the gap between theoretical learning and practical application. Our mission is to empower students with cutting-edge AI skills that enhance employability and prepare them for a tech-driven future.

- **OUR VISION--UPSKILL**: Empowering minds for the future.

- **INNOVATE**: Fostering creativity and breakthroughs .

- **EXCEL**: Preparing industry-ready professionals.

WHY SQL?

- Essential for Data Management & Storage

- High Demand in Software Development & Data Science

- Foundation for Big Data & Cloud Technologies

- Career Opportunities in Database Administration, Data Analytics & Backend Development

- Scalability for Enterprise Applications

- Integration with Business Intelligence & AI

LEARNING PATH

- Introduction to Databases & SQL

- Database Design & Normalization

- SQL Queries & Data Retrieval

- Data Manipulation & Transactions

- Indexes & Query Optimization

- Stored Procedures & Triggers

- Advanced SQL Concepts

- Database Administration & Security

- Capstone Projects & Research

DETAILED MODULE BREAKDOWN

Module 1: Introduction to Databases & SQL

- Fundamentals of Databases

- Relational vs. Non-Relational Databases

- SQL Basics & Syntax

- Career Opportunities in SQL & Database Management

Module 2: Database Design & Normalization

- ER Diagrams & Schema Design

- Database Normalization (1NF, 2NF, 3NF, BCNF)

- Primary, Foreign Keys & Constraints

- SQL Data Types & Relationships

Module 3: SQL Queries & Data Retrieval
•SELECT Statements & Filtering Data
•Aggregations & Grouping Data (GROUP BY, HAVING)
•Joins (INNER, OUTER, CROSS, SELF)
•Subqueries & Common Table Expressions (CTEs)
Module 4: Data Manipulation & Transactions
•INSERT, UPDATE, DELETE Operations
•Transactions & ACID Properties
•COMMIT, ROLLBACK, SAVEPOINT
•Data Integrity & Constraints
Module 5: Indexes & Query Optimization
•Indexing Strategies for Performance
•Query Execution Plans & Optimization
•Partitioning & Clustering
•Performance Tuning Techniques

Module 6: Stored Procedures & Triggers
•Creating & Managing Stored Procedures
•Triggers for Automation
•Functions & Views
•Dynamic SQL & Execution Plans
Module 7: Advanced SQL Concepts
•Recursive Queries & Window Functions
•JSON & XML Data Handling
•SQL for Data Science (Statistical Queries)
•Pivoting & Unpivoting Data
Module 8: Database Administration & Security
•User Roles & Permissions
•Backup & Recovery Strategies
•Data Encryption & Security Best Practices
•Cloud Databases (AWS RDS, Azure SQL, Google BigQuery)

Module 9: Industry Applications & Case Studies
•SQL in E-Commerce & Banking
•Business Intelligence & Reporting
•Ethical Considerations in Data Management
•Case Studies from Leading Companies
Module 10: Capstone Projects & Industry Research
•Hands-on Real-Time SQL Projects
•Industry Collaboration & Research-Based Projects
•SQL Portfolio Building
•Query Optimization & Performance Analysis

ASSIGNMENT'S &ASSESSMENTS

➤ Weekly hands-on SQL assignments
➤ Mid-term Database mini-projects
➤ Final capstone SQL project
➤ Live presentations & discussions

TOOLS & FRAMEWORKS USED

- **SQL & Database Tools:**
  MySQL, PostgreSQL, Microsoft SQL Server
  SQLite, Oracle SQL, IBM Db2
- **Query Optimization & Performance Tools:**
  EXPLAIN Plan, Query Profiler, pgAdmin
- **Cloud & BI Tools:**
  AWS RDS, Google BigQuery, Azure SQL
  Power BI, Tableau, Apache SparkSQL

RECOMMENDED READING

SQL & Databases:
•"SQL for Dummies" - Allen G. Taylor
•"Learning SQL" - Alan Beaulieu
•"SQL Performance Explained" - Markus Winand
•"The Art of SQL" - Stephane Faroult

WHY CHOOSE NXTSYNC?

- ☑ Industry-Aligned SQL & Database Curriculum
- ☑ Hands-on Real-World SQL Projects
- ☑ Expert Mentorship & Career Guidance
- ☑ Flexible Learning Schedule
- ☑ ISO-Certified SQL Training Program

Start Your SQL Learning Journey with NxtSync Today!

THANK YOU