SQL with AI - Course Syllabus

Beginner to Job-Ready | 60 minutes a day

Module 0 - SQL & Database Basics	What is Data , SQL , databases & tables, primary/foreign keys, etc.

CORE SQL FOUNDATION

Module 1 - Databases, Tables & Real-World Data	Schema design, keys in depth, table relationships, etc.
Module 2 - Data Types & Constraints	Numeric/string/date types, NOT NULL, UNIQUE, DEFAULT, CHECK, etc.
Module 3 - INSERT, UPDATE, DELETE	Adding & modifying rows, DELETE vs TRUNCATE, safe updates, etc.
Module 4 - SELECT & WHERE	Filtering rows, comparison & logical operators, LIKE, BETWEEN, IN, etc.
Module 5 - Sorting, DISTINCT & LIMIT	ORDER BY, LIMIT/OFFSET, DISTINCT, Top-N queries, etc.
Module 6 - Aggregate Functions	COUNT, SUM, AVG, MIN/MAX, GROUP BY, HAVING, etc.
Module 7 - Joins	INNER, LEFT, RIGHT joins, multi-table joins, common mistakes, etc.
Module 8 - Subqueries & Nested Queries	Subqueries in WHERE/SELECT/FROM, correlated subqueries, etc.

DATA CLEANING

Module 9 - Data Cleaning Using SQL	Handling NULLs, duplicates, text/date cleaning, AI-assisted cleaning, etc.

ADVANCED SQL

Module 10 - CASE WHEN & Conditional Logic	CASE syntax, categories, conditional flags, etc.

Module 11 - Window Functions	ROW_NUMBER, RANK, DENSE_RANK, running totals, etc.
Module 12 - Common Table Expressions (CTEs)	WITH clause, breaking down complex queries, etc.
Module 13 - Views, Indexes & Performance	CREATE VIEW, indexing basics, query performance, etc.
Module 14 - Stored Procedures & Transactions	Parameters, ACID properties, error handling, etc.

SQL + AI

Module 15 - Using AI for SQL Logic & Debugging	AI-assisted query writing, debugging queries, etc.
Module 16 - Using AI for Documentation & Interviews	Explaining SQL, writing documentation, interview prep, etc.

PROJECTS

Module 17 - Project	End-to-end analysis with mandatory data cleaning, etc.

One final exam and project submission is mandatory.