



This course combines topics from the following courses (any items marked with a * will be covered if time allows).

Topics taken from our **INTRODUCTION TO SQL** course

Using SQL Server <ul style="list-style-type: none">• SQL Server Management Studio• Controlling windows• Using Object Explorer	Setting criteria using WHERE <ul style="list-style-type: none">• Wildcards (% and _)• Setting criteria for dates• Coping with nulls	Aggregation and grouping <ul style="list-style-type: none">• SUM, AVG, MIN, MAX• Various ways to count• Grouping by fields• Using HAVING to filter results
Creating databases - overview <ul style="list-style-type: none">• Designing databases• Primary keys	Calculations <ul style="list-style-type: none">• Calculated columns• Using aliases• String functions and concatenation	Views <ul style="list-style-type: none">• The view designer• Limitations of the designer• Scripting views
Working with tables <ul style="list-style-type: none">• Creating tables• Allowing nulls or not• Identity fields• Creating relationships	Calculations using dates <ul style="list-style-type: none">• GetDate• Converting dates• Useful date functions	Subqueries <ul style="list-style-type: none">• The concept of a subquery• Syntax of subqueries• Using subqueries in a query
Simple Queries <ul style="list-style-type: none">• Creating queries• Comments• Indentation and case	Basic joins <ul style="list-style-type: none">• Inner joins• Table aliases• Left and right outer joins	Derived tables and CTEs <ul style="list-style-type: none">• Using derived tables• Common Table Expressions (CTEs)• Multiple CTEs in a single query



Topics taken from our **ADVANCED SQL** course

Stored procedures

- Creating stored procedures
- Executing stored procedures
- System stored procedures

Variables

- Declaring variables
- SET versus SELECT
- Tricks with variables
- So-called global variables

Parameters and return values

- Passing parameters
- Default values / WHERE clauses
- Output parameters
- Using RETURN

Scalar functions (*)

- What they are
- Writing user-defined functions
- Worked examples
- Pros and cons of scalar functions

Testing conditions

- IF / ELSE statement
- Using CASE where possible

Looping

- Syntax of WHILE
- Breaking out of a loop

Error-handling (*)

- Using TRY / CATCH
- System error functions
- Custom error messages

Deleting using SQL

- Ways to drop tables
- DELETE versus TRUNCATE

Updating data in SQL

- The UPDATE statement
- Updating using joins

Inserting data

- Making tables (SELECT INTO)
- Appending data (INSERT INTO)
- Inserting individual rows

Creating tables

- Creating tables in SQL
- Primary keys and indexes
- Adding relationships

Transactions (*)

- Beginning a transaction
- Committing / rolling back

Temporary tables and table variables

- Scope (local versus global)
- Using temporary tables
- Creating table variables
- Pros and cons of each approach

Table-valued functions (*)

- In-line table-valued functions
- Multi-statement table-valued functions

Dynamic SQL (*)

- Building up dynamic SQL
- Executing dynamic SQL
- Disadvantages of dynamic SQL

Pivots (*)

- Assembling data for pivoting
- Using PIVOT
- Dynamic column headers

Triggers (*)

- Insert, update and delete triggers
- Using generated tables (eg INSERTED)
- Using INSTEAD OF

Maximum 6 people per course. Scheduled classroom courses include lunch at a local restaurant; you can see how our online training works [here](https://www.wiseowl.co.uk/). For more information, see <https://www.wiseowl.co.uk/>.