



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

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



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/>.