

**Price:** R8,900.00 excl. VAT  
**Duration:** 3 days  
**Delivery:** Virtual classroom or  
on-site training

## SQL Fundamentals

### Description

SQL is the standard language used to work with data in modern business systems.

This course focuses on a practical skill: writing queries to find and filter data. You learn how to retrieve the information you need from a database. The course also explains how data is organised in a database.

The course is not linked to any specific database system. The concepts apply across platforms.

### Objectives

After completing the SQL Fundamentals course, you will be able to:

- Describe how data is organised in a database.
- Explain how tables are linked using keys.
- Write SQL queries to find and filter data.
- Sort and summarise query results.
- Retrieve data from multiple tables.
- Create basic tables using SQL.
- Add, change, and remove data using SQL.

### Intended Audience

This course is useful if:

- You need to find or extract data that matches certain conditions.
- You work with systems that store data in a database.
- You need to check or verify data stored in a system.
- You work with large amounts of data and spreadsheets become difficult to use.

### Prerequisites

No prior SQL knowledge is required.

Some familiarity with databases or system data may be helpful, but it is not necessary.

### Course Contents

#### **Working With Databases and Data**

- Introduction to databases and SQL.
- Tables, records, and fields.
- Relationships between tables.
- Primary keys and entity integrity.

- Foreign keys and referential integrity.
- The concept of normalisation.

### **Creating Database Structures**

- Creating databases.
- Creating tables.
- Data types.
- Defining primary keys.
- Defining foreign keys.

### **Managing Data**

- Inserting data into tables.
- Updating table data.
- Deleting data from tables.

### **Finding Data With SELECT**

- Listing rows and columns.
- Selecting specific columns.
- Using column aliases.
- Filtering rows with WHERE.
- Using WHERE in UPDATE and DELETE.

### **Conditions and Operators**

- Comparison and logical operators.
- BETWEEN, IN, LIKE, IS NULL.
- Operator precedence.

### **Sorting and Summarising Data**

- DISTINCT and ORDER BY.
- Aggregate functions (SUM, AVERAGE, MAX, MIN and COUNT).
- Grouping query results.
- Common string and date functions.

### **Working With Multiple Tables**

- Subqueries.
- Table aliases.
- INNER JOIN.
- Joins with conditions.

*\*\* The lecturer reserves the right to modify the contents of the course to suit the needs of the delegates.*