

## 10985 Introduction to SQL Databases

### Overview

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Course is aimed at people looking to move into a database professional role or whose job role is expanding to encompass database elements. The course describes fundamental database concepts including database types, database languages, and database design

### Target Audience

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The primary audience for this course is people who are moving into a database role, or whose role has expanded to include database technologies.

### Course Objectives

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After completing this course, students will be able to:

- Describe key database concepts in the context of SQL Server 2016
- Describe database languages used in SQL Server 2016
- Describe data modelling techniques
- Describe normalization and de-normalization techniques
- Describe relationship types and effects in database design
- Describe the effects of database design on performance
- Describe commonly used database objects

### Course Outline

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#### 1 - Introduction to databases

Introduction to relational databases  
Other types of database  
Data analysis  
Database languages  
Lab : Querying SQ Server

#### 2 - Data Modelling

Data modelling  
ANSI/SPARC database model  
Entity relationship modelling  
Lab : Entity relationship modelling

### 3 - Normalization

Why normalize data?  
Normalization terms  
Levels of normalization  
De-normalization  
Lab : Normalizing raw data

### 4 - Relationships

Schema mapping  
Referential integrity  
Lab : Designing relationships

### 5 - Performance

Indexing  
Query performance  
Concurrency  
Lab : Query performance

### 6 - Database Objects

Tables  
Views  
Stored Procedures, Triggers and Functions  
Lab : Using SQL Server

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