

KOENIG SOLUTIONS • COURSE OUTLINE

Introduction to SQL Databases-55315

Learn to design, normalise and manage SQL Server databases, from data modelling to indexing and core database objects.

3 Days

24 HOURS

6

MODULES

18

TOPICS

26

HANDS-ON LABS

COURSE OVERVIEW

The Introduction to SQL Databases-55315 course is designed as a foundational course for individuals seeking to delve into the world of SQL databases. The curriculum offers a comprehensive overview of database concepts, beginning with Module 1 that covers the basics of Relational databases, Alternative database types, Data analysis, and an introduction to SQL Server's database languages. Through basic SQL training courses such as this, learners will build a solid understanding of data modeling in Module 2, including the ANSI/SPARC database model and Entity-relationship modeling. Module 3 moves into the critical area of Normalization and its counterpoint, deNormalization. Module 4 focuses on the establishment and maintenance of relationships and Referential integrity, crucial for database integrity. Module 5 addresses performance issues, highlighting the importance of Indexing, Query performance, and Concurrency. Finally, Module 6 introduces learners to core database objects such as tables, views, and stored procedures. Overall, this course equips learners with the essential knowledge and skills to navigate and manipulate SQL databases effectively, providing a solid foundation for further advanced database management and development.

Who Should Attend

Introduction to SQL Databases-55315 is a foundational course designed to impart essential skills in managing and analyzing data using SQL databases. Target audience for the course includes:

Aspiring Database Administrators (DBAs)

Data Analysts seeking to understand database structures

IT Professionals transitioning to database-related roles

Software Developers who need to interact with databases

System Analysts involved in data-related projects

Business Intelligence Professionals

Data Scientists who require a grounding in database technology

Students pursuing careers in data management

Technical Project Managers overseeing database projects

Quality Assurance Testers dealing with data validation

Report Writers and Data Visualisation Specialists

LEARNING OBJECTIVES

- Explain relational and alternative database types
- Describe SQL Server's database languages
- Apply entity-relationship modelling to design databases
- Describe the ANSI/SPARC database model
- Apply normalisation and denormalization techniques
- Plan relationships and referential integrity
- Analyse the performance effects of indexing and concurrency
- Describe tables, views, stored procedures and triggers

COURSE SYLLABUS

6 Modules, 18 Topics

01

5 Labs

Introduction to Databases

This module introduces key database concepts in the context of SQL Server 2016.

TOPICS

Introduction to relational databases · Other types of databases · Data analysis · Database languages in SQL Server

02**4 Labs**

Data Modelling

This module describes data modelling techniques.

TOPICS

Data modelling · ANSI/SPARC database model · Entity relationship modelling

03**5 Labs**

Normalization

This module describes normalization and denormalization techniques.

TOPICS

Fundamentals of Normalization · Normal form · Denormalization

04**3 Labs**

Relationships

This module describes relationship types and effects in database design.

TOPICS

Introduction to relationships · Planning referential integrity

05**4 Labs**

Performance

This module introduces the effects of database design on performance.

TOPICS

Indexing · Query performance · Concurrency

06**5 Labs**

Database Objects

This module introduces commonly used database objects.

TOPICS

Tables · Views · Stored procedures, triggers and functions

Practise What You Learn

#	MODULE	ACTIVITY
01	Introduction to Databases	■ Exploring and querying SQL Server databases ■ Describe what a database is ■ Understand basic relational aspects ■ Describe database languages used in SQL Server ■ Describe data analytics
02	Data Modelling	■ Identify components in entity relationship modelling ■ Understand the common data modelling techniques ■ Describe the ANSI/SPARC database model ■ Describe entity relationship modelling
03	Normalization	■ Normalizing data ■ Describe normalization benefits and notation ■ Describe important normalization terms ■ Describe the normalization levels ■ Describe the role of denormalization
04	Relationships	■ Planning and implementing referential integrity ■ Describe relationship types ■ Describe the use, types, and effects of referential integrity
05	Performance	■ Performance issues ■ Discuss the performance effects of indexing ■ Describe the performance effects of join and search types ■ Describe the performance effects of concurrency
06	Database Objects	■ Using SQL server ■ Describe the use of tables in SQL Server ■ Describe the use of views in SQL Server ■ Describe the use of stored procedures in SQL Server ■ Describe other database objects commonly used in SQL Server

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training

Live Online Classes (ILO)

Fly-Me-A-Trainer (FMAT)

Flexi (Self-Paced)

1-on-1 Training

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