

Microsoft SQL Server Administration Course Details

Department: ICT and Security Management

Presented by Magna Skills Development Institute

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Course Summary

Handling complex Databases is a skill that is very much in demand all around the world. Validating that you have that skill with a certification such as SQL server certification will take your career to new heights. Here, In this blog, I will provide you with all the necessary details you need to know about SQL Certification and how it can help you grab your dream job.

Microsoft SQL Server continues to be one of the world's most popular and top databases. Database is a heart of IT which is needed to stored all critical data and information.

If you want to become SQL database administrator then this is the course for YOU.

This training course will provide you all the necessary skills you need to be a successful database administrator. Plus, this course will prepare you for the SQL Server MCSA certification.

Course Objectives

- By the end of this course you will be a professional SQL database administrator and be able to apply for SQL jobs
- Administration of SQL database through Microsoft Windows
- You will learn 150+ SQL queries
- You will be able to troubleshoot everyday SQL related issues
- You will manage SQL servers in a corporate environment
- You will write basic to advance SQL queries
- Troubleshoot everyday SQL database related issues
- Know how to answer specific business questions by using SQL's aggregate functions
- Students will be able to run reports for management so they can make financial decisions

Course Outline

Section 1 - Introduction

- Introduction to Database
- RDBMS
- What is SQL?
- Top 5 RDBMS
- Introduction to MS SQL Server

- Different editions of MS SQL

Section 2 - Download, Install and Configure Windows

- MS SQL Server prerequisite
- Lab setup
- What is virtualization?
- Download and Install VMWare Workstation Player
- Optional - Download and Install Oracle Virtualbox
- Create a Virtual Machine
- Download and Install Windows Server
- Virtual Machine Management

Section 3 - Download, Install and Configure MS SQL Server

- Prerequisites for MSSQL Installation
- Download MSSQL and SQL Server Management Studio
- Install and Configure MSSQL
- Install SQL Server Management Studio
- Download and Install AdventureWorks Database

Section 4 - Database Fundamentals and Design

- What is Data and Database?
- How is data stored?
- What is a Table, COLUMN and ROW ?
- What is a key? primary, foreign, unique keys etc.
- What is Relational Database and Relational Database Management System (RDBMS)?
- What is a Transaction and ACID properties?
- Database Normalization AND Different forms of Database Normalization
- Create your first Database, Table and Populate table with data...

Section 5 - Introduction to SQL Commands

- Welcome to Basic SQL Commands
- What is a SQL Statement and types of SQL statements
- DML Statement with examples
- DDL Statements with examples
- DCL Statement with examples
- TCL Statement with examples

Section 6 - Query and Manipulation of Data using SQL

- Create TABLE(s) and Temp Table(s)
- What Is a View?
- SELECT Statement in detail
- Operators, Expressions and Conditions
- WHERE Clause, ORDER BY, HAVING BY, GROUP BY Clause
- Select from two tables – JOINS
- Different Types of JOINS
- What is a Sub Query?
- INSERT, UPDATE, DELETE and Truncate Statements
- What is a Store Procedure?
- Function, Trigger and INDEX
- Clustered ,Non-clustered Indexes and Index Design considerations
- Index Fragmentation and Lab for Index

Section 7 - Microsoft SQL Database Administration

- Overview of MSSQL Management Tools
- Exploring SQL Server Management Studio (SSMS)
- Exploring SQL Server Configuration Manager

- MSSQL System Databases, DO's and DONT's of System databases
- What is master, etmpdb, msdb and other system databases?

Section 8 - Deep Dive into MSSQL Working

- What are Pages , Extents, Page Architecture and PFS?
- MSSQL Architecture
- MSSQL Database Architecture
- Operation and working of transaction log
- Configuring user Database
- Best practices while creating user Database

Section 9 - MSSQL Backup and Restore

- Backup of a Database, Importance for DBA and Different Media used for Backups
- Recovery Models in MSSQL and how that impact backups an restore
- Full and differential backups
- Transaction Log Backups, Log Backup Chain and Tail-log Backup
- Lab for Full, Differential and Transaction Log Backups
- Restore and Recovery Overview
- Full, Differential and Transaction Log database restore
- Point in time restore of a database
- Complete Backup , Restore and Restore in Time Lab
- MS SQL Server DBCC CHECKDB command
- Page Level Restore / Recovery using Full Backups
- Creating Maintenance Plan Backups/Re-indexing etc.

Section 10 - MSSQL User Management

- MSSQL Security Model
- MSSQL Server Authentication Modes

- Server Logins
- Server Roles
- Database Users
- Database Roles
- Permissions (GRANT , DENY, and REVOKE)

Section 11 - MSSQL Server Agent Management

- SQL Server Agent Introduction
- SQL Server Agent Jobs and Schedules
- Agent Alerts
- Operators
- Database Mail
- Activity Monitor

Section 12 - Advanced SQL Server Administration Topics

- High Availability and its Types
- What Is Replication and Transactional Replication
- Transactional Replication Setup (LAB)
- Log Shipping and Configuring Log Shipping
- SQL Server Encryption and Encryption Types
- Transparent Data Encryption (TDE) and configuration

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Company Overview

Who We Are: Magna Skills is a premier training and capacity-building organization specializing in professional development for government institutions, NGOs, and the private sector.

Our Mission: To provide world-class training solutions that equip professionals with the expertise needed to excel in their careers and contribute meaningfully to their organizations.

Our Vision: To be the leading provider of professional training and development across Africa, fostering excellence, innovation, and capacity-building in public and private sectors.

Core Values

- **Excellence** – Delivering high-quality training tailored to meet the evolving needs of professionals.
- **Integrity** – Upholding the highest ethical standards in all our engagements.
- **Innovation** – Embracing new technologies and methodologies to enhance learning experiences.
- **Customer-Centric Approach** – Ensuring client satisfaction by providing relevant, practical, and impactful training.
- **Collaboration** – Partnering with industry experts and institutions to provide the best learning opportunities.

Our Training Methodology

We use a blended learning approach that includes instructor-led training, case studies, workshops, and post-training support.

Why Choose Magna Skills?

- Experienced Trainers
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- Proven Track Record

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By signing this agreement, both parties confirm their commitment to the terms outlined in this proposal.