

Data Science powered by SQL

A **DATA SCIENCE** COURSE PRESENTED BY



— SIGNIFY —

LEARNING ACADEMY

where learning becomes a journey

INTRODUCTION

Working with data is foundational to unlocking the power of data science. Being able to mine, clean and transform large data sets are critical skills for any data professional. We teach you to perform these tasks in SQL, from basic queries to more complex operations where optimisation and database design are key.

This module also covers the key principles and applications of presenting data using various visualisation techniques. You will learn about the latest dashboarding technologies as a key skill to deliver the insights and recommendations that your data is telling you.

At the end of this course, you will:

- Understand what Data Science is
- Create a database in Structured Query Language (SQL)
- Creating tables in SQL
- Connecting to SQL from VBA subroutine
- Populating SQL tables using VBA
- Retrieving data from SQL database using VBA code
- Understand and write popular SQL statements
- Write procedures and views in SQL
- Analyse data
- Present data (Visualisation)
- Do comparative analysis

WHO SHOULD ATTEND?

This course is for anyone interested in the field of data analysis and data science.

TRAINING OVERVIEW

MODULE 1 - INTRODUCTION TO PROGRAMMING LANGUAGES

Concepts, principles, and terminology of programming languages are covered. How to develop program solving skills is discussed.

MODULE 2 - DATA SCIENCE

The components of Data Science, processes and tools are discussed. The approaches in data analyses are covered along with the challenges a data scientist face.

MODULE 3 - SQL WITH PRACTICAL APPLICATIONS

Types of databases is discussed, and its components are covered. The basics of SQL is covered. SQL (or Structured Query Language) a powerful programming language which is used for communicating with and extracting data from databases are covered in detail. The learner will develop a database and tables, work with Views and import data into SQL. Extract data using VBA code from a SQL table. Write queries, join tables, and learn to manipulate data. Writing procedures in SQL and executing them is also included.

MODULE 5 - DATA ANALYSIS AND VISUALISATION OF DATA

Data cleansing and statistical analysis are covered focusing on descriptive analysis and regression using economic Gross Domestic Product (GDP) and exchange rate data. Practical examples of data visualisation are illustrated.

MODULE 6 - COMPARATIVE ANALYSIS

Writing stored procedures using more than one parameter and executing them using SQL is explained in detail. Comparative analysis is done on GDP growth and GDP per capita data

for all the countries of the world from 1960 to 2020. Analysis comparing South Africa with its peers are also illustrated.

MORE INFORMATION



Duration

Part-time: 4 weeks - 10 to 15 hrs/week (a focused, dedicated 15 hours)



Location

Blended learning with virtual/online sessions. – eLearning modules complimented with expert facilitator input and ask the expert/e-tutor sessions



Certification / Recognition

Upon completion, the learner will receive a Certificate of Achievement (**at Beginners to Intermediate Skill level**)

ENTRY REQUIREMENTS

You must be competent in:

- Excel for Beginners
- Intermediate Excel
- Grade 12 mathematics
- VBA Coding (covered during the Data Analytics powered by Excel and VBA course)

It is important to have access to the internet as well as a laptop with the following software:

- Microsoft Office: You may need to make use of the Google office suite, which is free with a Gmail account. Alternatively, Microsoft Office applications (such as Excel, PowerPoint, and Word) may be used.
- SQL 2018 including Management Studio
- We recommend using Google Chrome to access the course, but any popular browser will suffice.

Hardware requirements:

- Operating System: Since we make use of Windows based apps, Windows 10 is recommended (Windows 7 minimum).
- Processor: Minimum i3. Baseline higher than 2GHz
- RAM: Minimum 4GB
- Bandwidth: 20GB data per month should be sufficient, but will vary based on your personal activity
- Communication: Webcam and Microphone