



## COURSE: Data Science with R and SQL Server

Introducing the language, statistics, data mining, and machine learning with R and using R in SQL Server and Microsoft BI stack.

R is the most popular environment and language for statistical analyses, data mining, and machine learning.

Managed and scalable version of R runs in SQL Server, Power BI, and Azure ML. The main topic of the course is the R language. However, the course also shows how to use the languages and tools available in MS BI suite for data science applications, including Python, T-SQL, Power BI, Azure ML, and Excel. The labs focus on R; the demos also show the code in other languages.

### Summary

*Duration:* 4 days/ 32 hours

*Level:* 300\*

*Delivery method:* In class

*Language:* English

\* The difficulty level is consistent with the widely accepted scale of technical difficulty of training on Microsoft Corp

### AUDIENCE:

- Data Scientists, Data Analysts and Data Engineers
- BI Developers who need to learn advanced analytics

### AFTER THE TRAINING ATTENDEES WILL BE ABLE TO:

- Program with R from the scratch
- Understand a lifecycle of a data science project
- Perform the data overview and do the most tedious task in a project, the data preparation task
- Understand and use more advanced methods for researching linear dependencies
- Do feature selection, starting with the basics of matrix calculations
- Perform more advanced data mining and machine learning analyses, including supervised and unsupervised learning
- Get familiar with forecasting, text mining, and reinforcement learning. Finally, the attendees also learn how to use the R code in SQL Server, Azure ML, and Power BI

### TOPICS:

**Module 1.** Introducing data science and R

**Module 2.** Introducing Python

**Module 3.** Data overview

**Module 4.** Data preparation

**Module 5.** Associations between two variables and visualizations of associations

**Module 6.** Feature selection and matrix operations

**Module 7.** Unsupervised learning

**Module 8.** Supervised learning

**Module 9.** Modern topics

**Module 10.** R in SQL Server and MS BI