KOENIG · COURSE OUTLINE

Advanced Program for Data Analyst

Learn to analyse data using Excel, SQL, R, Python and Power BI, from data modelling to interactive dashboards.

5	63	4
MODULES	TOPICS	HANDS-ON ACTIVITIES

COURSE OVERVIEW

This course covers data analysis techniques across Excel, SQL, R, Python and Power BI. It begins with Excel tools such as pivot tables, Power Query and Power Pivot for data modelling and dashboards, then moves to SQL concepts including queries, joins, subqueries and views for working with relational databases. It continues with R and Python programming, covering data types, control structures and libraries such as dplyr, ggplot, Numpy, Pandas and Matplotlib. The course concludes with Power BI, covering data modelling, report and dashboard creation, filtering, aggregation and security.

WHO THIS COURSE IS FOR

- **Data Analysts**
- **Business Analysts**
- **Database Administrators**
- **Data Scientists**
- **Reporting Analysts**
- **BI Developers**

LEARNING OBJECTIVES

- Apply pivot tables, filters and Power Query in Excel
- Build data models using Power Pivot and create dashboards
- Explain SQL concepts, RDBMS structures and constraints
- Apply SQL queries, joins, subqueries and views
- Describe R data types, structures and control statements
- Apply R libraries such as dplyr and ggplot for analysis
- Develop Python scripts using Numpy, Pandas and Matplotlib
- Build reports and dashboards in Power BI Desktop

COURSE SYLLABUS

5 Modules, 63 Topics

01

Excel for Data Analysis

TOPICS

Excel Basics · Pivot Tables, Filters, and Sorting · Power Query · Data Modelling using Power Pivot · Dashboard & Visualization

02

SQL for Data Analysis

TOPICS

SQL Concepts · RDBMS Concepts · DML, DDL, DCL statement · SQL Queries · SQL constraints · SQL Joins · Subqueries · Views

03

R for Data Analysis

TOPICS

- Introduction of R
- Data Types
- Data Structures
- Decision-Making Statements Conditional Loops
- Flow Control Statements
- If Statements
- For loops
- While Loops
- **Built Functions in R:** Base, datasets, dplyr and ggplot

04

Python for Data Analysis

TOPICS

- Basics of Python
- Introduction to Python
- Introduction to Python & Data Science Python Installation on laptops
- Python Basics - Variables - Python Build in functions
- - Modules - Python Libraries installation using PIP
- Python Basics - Python Operators
- **Python Data Structures:** List, Tuple, Dictionaries, Set
- Python Basics - Flow Control Statements - If Statements - while Loops
- Python Basics - Data & time modules in python - Interfaces in Python - For Loops
- Python modules for Data Analysis
- Python Basics - Web scrapping - Python custom functions
- - Lambda Function - Regular Expressions
- Data science Life cycle - Numpy Module
- Data science Life cycle - Pandas Module
- Data science Life cycle - Matplotlib Module

05

4 Practical Activities

Power BI

TOPICS

- Introduction to Power BI Desktop
- Download the Training Data Files Introduction to Signing Up for Power
- Signing up for Power BI Preview
- Load Data into the Power BI Service Preview
- The Power BI Desktop
- Intro to Power BI Desktop Section
- Introduction to the Power BI Desktop Preview
- Creating Reports in Power BI Desktop
- Create Reports in Power BI Desktop Section
- Data Modelling
- Data Schemas
- Creating Tables in Power BI
- Table Styles and Formatting Preview Matrix
- Answers to Tables and Metrics Practical Activity Changing the Method of Aggregation
- Methods of Aggregation Challenge
- Methods of Aggregation Challenge Completed
- Cards and Multi Row Cards
- Percentage Calculations
- Filtering Data - Using Slicers
- Filtering Data - Visual Filters
- Filtering Data - Page Filters
- Filtering Data - Drill Through Filter
- Creating Dashboards
- Paginated report
- Power BI Service
- Security

NOTES

- Microsoft Copilot for Excel

HANDS-ON ACTIVITIES

Practise What You Learn

#	MODULE	ACTIVITY
05	**Power BI**	■ Practical Activity ■ Tables and Metrics Practical Activity ■ Practical Activity - Filters ■ Practical Activity Filters Completed

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

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