



# Data Analysis and Visualization with Microsoft Excel

Course ID #: 7000-748-ZZ-Z

Hours: 21

Delivery Method: Instructor-Led, Classroom or Virtual

## Course Content

### Course Description:

Technology and the data that it both collects and makes accessible is now interwoven with businesses and lives. The era of "big data" has exploded due to the rise of cloud computing, which provides an abundance of computational power and storage, enabling organizations of all sorts to capture and store data. Leveraging that data effectively can provide timely insights and competitive advantage.

Analyzing data to find issues, insights, and opportunities is now a critical part of many job roles. Beyond the analysis, data analysts in all job roles must be able to effectively present and communicate their findings in visually compelling ways.

Microsoft® Excel® is designed for this purpose. Excel can connect to a wide range of data sources, perform robust data analysis, and create diverse and robust data-driven visualizations to show insights and trends, as well as create reports. These capabilities enable people who use Excel for data analysis to turn data into thoughtful action.

### Course Objectives:

In this course, you will analyze and visualize data using Excel and associated tools. You will:

- Perform data analysis fundamentals.
- Visualize data with Excel.
- Analyze data with formulas and functions.
- Analyze data with PivotTables.
- Present visual insights with dashboards in Excel.
- Create geospatial visualizations with Excel.
- Perform statistical analysis.
- Get and transform data.
- Model and analyze data with Power Pivot.
- Present insights with reports.

### Prerequisites:

To ensure success, you should have baseline skill using Excel worksheets, particularly in creating workbooks with formulas and functions.

### Target Audience:

This course is designed for students who already have foundational knowledge and skills in Excel and who wish to perform robust and advanced data and statistical analysis with Excel using PivotTables, use tools such as Power Pivot and the Analysis ToolPak to analyze data, and visualize data and insights using advanced visualizations in charts and dashboards in Excel.



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## Topics:

### Lesson 1: Data Analysis Fundamentals

- Introduction to Data Science
- Understanding Relationships
- Relational Databases
- Create and Modify Tables
- Sort and Filter Data

### Lesson 2: Visualizing Data with Excel

- Visualize Data with Charts
- Considerations when Creating Charts
- Working with Different Chart Types
- Modify and Format Charts
- Apply Best Practices in Chart Design

### Lesson 3: Analyzing Data with Formulas and Functions

- Analyze Data with Formulas and Named Ranges
- Analyze Data with Functions
- Using Database Functions
- Using Complex Functions
- Use of Date and Time Functions
- Troubleshooting Formulas
- Implement Data Validation, Forms, and Controls
- Create Conditional Visualizations with Lookup Functions

### Lesson 4: Analyzing Data with PivotTables

- Create a PivotTable
- Analyze PivotTable Data

### Lesson 5: Presenting Visual Insights with Dashboards in Excel

- Visualize Data with PivotCharts
- Filter Data Using Slicers and Timelines
- Create a Dashboard in Excel

### Lesson 6: Creating Geospatial Visualizations with Excel

- Create Map Charts in Excel
- Customize Map Charts in Excel

### Lesson 7: Performing Statistical Analysis

- Visualize Trendlines and Sparklines with Excel
- Analyze Data with the Analysis ToolPak

### Lesson 8: Getting and Transforming Data

- Connect to Data with Queries
- Overview of Power Query
- Clean and Combine Data
- Shape and Transform Data

### Lesson 9: Modeling and Analyzing Data with Power Pivot

- Install Power Pivot in Excel
- Create Data Models with Power Pivot
- Create Power Pivots
- Perform Advanced Data Analysis and Visualization

### Lesson 10: Presenting Insights with Reports

- Plan a Report
- Create a Report

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