COURSE SYLLABUS

Data Analytics Technologies Bootcamp

Master the industry-standard tools and programming languages used by Data Analysts, including Excel, SQL, and Tableau, in this comprehensive classroom training program. Gain hands-on experience working on real-world projects and learn to organize, analyze, summarize, and visualize data to present actionable insights.

Group classes in NYC and onsite training is available for this course.
For more information, email corporate@nobledesktop.com or visit:
https://www.nobledesktop.com/classes/data-analytics-technologies

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Course Outline

This package includes these courses

- Excel Level I: Fundamentals (6 Hours)
- Excel Level II: Intermediate (6 Hours)
- Excel Level III: Advanced (6 Hours)
- SQL Level 1 (6 Hours)
- SQL Level 2 (6 Hours)
- SQL Level 3 (6 Hours)
- Tableau Level I (6 Hours)
- Tableau Level II (6 Hours)

Excel Level I: Fundamentals

- Get comfortable with the Excel interface and learn multiple ways to enter and organize data in a worksheet.
- Work with rows, columns, and worksheets by inserting, deleting, hiding, grouping, and managing spreadsheet elements.
- Build foundational Excel skills with Autofill, basic calculations, AutoSum, and essential functions such as SUM, AVERAGE, MAX, MIN, and COUNT.
- Use formulas more effectively with absolute references, logical true/false tests, text functions, and multi-input functions.
- Format spreadsheets for clarity with cell formatting and conditional formatting that highlights data based on specific rules.
- Create visual reports with column charts, line charts, pie charts, sparklines, and Excel Tables.
- Manage workbooks more efficiently using Freeze Panes, printing tools, display options, templates, and essential keyboard shortcuts and Excel tips.
- Reinforce key concepts through end-of-class projects designed to review what you learned.

Excel Level II: Intermediate

Learn intermediate Excel functions like VLOOKUP and SUMIFS, and how to summarize data with Pivot Tables, Sort & Filter

databases, and split and join text. Gain the skills needed to utilize complex Excel functions and prepare for more advanced training.

- Navigate worksheets more efficiently using keyboard shortcuts and Excel tools that speed up movement within and between cells.
- Work with formulas and text by reviewing calculation methods, splitting text with Text to Columns, and joining text with CONCAT and the ampersand.
- Manage cell ranges with Paste Special, Paste Special Values, and named ranges to format data, hardcode results, and simplify references in calculations.
- Use database tools such as VLOOKUP, XLOOKUP, Sort & Filter, and Remove Duplicates to find, organize, and clean large sets of data.
- Build PivotTables to summarize large databases, group data within PivotTables, and create multiple PivotTables on a single worksheet.
- Apply logical, math, and statistical functions including IF, AND, OR, SUBTOTAL, SUMIFS, and COUNTIFS to analyze data based on conditions and filtered results.
- Improve data quality with Data Validation and reinforce key course concepts by completing an end-of-class project.

Excel Level III: Advanced

Learn all of the most complex features of Microsoft Excel in this advanced training course—Excel functions, macros, and data analysis to improve efficiency and manage complex data in any job setting. This advanced course is ideal for Excel power-users.

- Use advanced navigation tools, Autofill techniques, Hot Keys, and Go To Special to move through worksheets and work more efficiently.
- Build stronger formulas with mixed references, cell auditing tools, date functions, and custom number formats.
- Create advanced logic with nested IF statements and IF formulas that incorporate AND/OR criteria for more flexible results.
- Perform What-If Analysis with Goal Seek and Data Tables to test variables and evaluate possible outcomes.
- Analyze data with advanced PivotTable tools, including base fields and sets, calculated fields, and Pivot Charts.
- Use XMATCH, INDEX-MATCH, macros, and dynamic arrays to create powerful lookups, automate tasks, and complete an end-of-class project reviewing key concepts.

SQL Level 1

This beginner-level SQL course introduces the foundational concepts of structured query language and relational databases. Through hands-on exercises and the use of SQL Server Management Studio, you'll learn how to write, filter, and structure queries to extract meaningful insights from data.

- Understand core database concepts, including tables, rows, columns, and different types of SQL
- Connect to databases and navigate SQL Server Management Studio using tools like Object Explorer and Query Editor
- Write SELECT statements to retrieve data, specify columns, sort results, and eliminate duplicates
- Use WHERE, AND, OR, IN, and NOT clauses to filter data and apply pattern matching with wildcard characters
- Explore data types, comparison operators, and case sensitivity to refine queries with greater control
- Learn how to join tables using INNER JOIN and understand relational database concepts with ER diagrams and table aliases

SQL Level 2

This intermediate SQL course expands your ability to analyze and manipulate data through advanced querying techniques. Learn to work with joins, data types, aggregate functions, and date/time operations to uncover deeper insights and organize complex datasets.

- Compare INNER and OUTER JOIN types and use LEFT, RIGHT, and FULL JOINs to combine data across tables

- Identify and work with NULL values to ensure complete and accurate data analysis
- Use the CAST function to convert data types and make your queries more flexible
- Perform calculations with aggregate functions like SUM, COUNT, AVG, MAX, and MIN to summarize data
- Apply date functions to extract, format, and compare dates for time-based analysis
- Group results using GROUP BY and filter grouped data using the HAVING clause for advanced segmentation

SQL Level 3

This advanced SQL course is designed for professionals ready to deepen their expertise in data querying, logic, and database development. Learn to write sophisticated queries using subqueries, CASE statements, views, functions, and stored procedures, all key skills for roles in data analysis, data science, and database management.

- Write subqueries to create layered queries using single-value, multi-value, and table-value structures
- Use window functions with `OVER` and `PARTITION BY` to apply aggregate logic across rows without grouping
- Implement conditional logic with `CASE` and `IIF` statements to dynamically transform query results
- Manipulate text data using string functions like `SUBSTRING`, `CHARINDEX`, `UPPER`, and more
- Apply self joins to compare records within the same table and understand their unique structure and use cases
- Build and query views, user-defined functions, and stored procedures to modularize your SQL code

Tableau Level I

This beginner Tableau course introduces the core concepts of data visualization and gives students the hands-on experience needed to create impactful charts, dashboards, and stories using Tableau Public. Learn to connect, clean, and transform your data into visuals that drive insights and decision-making.

- Understand the types, formats, and sources of data and how to connect them to Tableau
- Create foundational visualizations such as bar charts, line graphs, and treemaps using the “Show Me” panel
- Use built-in functions and custom calculations to analyze and manipulate your data within visualizations
- Clean and organize raw data using tools like the Data Interpreter, pivoting features, and filters
- Build interactive dashboards and stories that combine multiple views for dynamic storytelling
- Format and publish your visualizations to Tableau Cloud or export them for sharing and presentation

Tableau Level II

This advanced Tableau course is designed for users ready to elevate their data visualization skills with custom charts, interactive dashboards, and powerful geographic mapping tools. Learn to work with complex datasets and tailor your visualizations for deeper insights and dynamic storytelling.

- Format geographic data and build a variety of interactive map types, including heat maps, spider maps, and choropleth maps
- Integrate custom visuals using background images, polygon data, and Mapbox maps for enhanced design and functionality
- Create advanced charts such as dual-axis (layered) maps, alluvial diagrams, ranking visuals, and circular area charts
- Add interactivity to dashboards through sheet swapping, filtering actions, and dynamic content controls
- Track and display time-based data trends spatially using map animations and proportional symbols
- Prepare and publish high-quality map visualizations for presentation, sharing, and Tableau Cloud distribution