COURSE SYLLABUS

Data Analytics with Excel, SQL & Tableau Course

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 (Live Online) and onsite training are available for this course. For more information, email onsite@graduateschool.edu or visit: https://sdfm.graduateschool.edu/courses/data-analytics-technologies



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Course Outline

This package includes these courses

- Beginner Excel Course (6 Hours)
- Intermediate Excel Course (6 Hours)
- Advanced Excel Course (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)

Beginner Excel Course

In this beginner Excel course, you will learn the essentials of Microsoft Excel, including calculators, basic functions, graphs, formatting, and printing.

- Become familiar with the interface and data entry
- Learn essential formulas and functions
- Format and print your work
- Create charts, including line, column, and pie charts
- Learn tips and tricks for easy workbook management
- Review key concepts in a final project

Intermediate Excel Course

Learn intermediate Excel functions like VLOOKUP and SUMIFS, and how to summarize data with Pivot Tables, Sort and Filter databases, and split and join text.

- Learn to split and join text, add data validation, and use named ranges
- Use database functions such as VLOOKUP and HLOOKUP
- Add logical statements, including AND, OR, and IF statements
- Create PivotTables to quickly summarize large databases
- Use statistical functions such as RANK, COUNTIFS, and SUMIFS
- Create advanced combo charts from multiple charts
- Review key concepts by creating a final project

Advanced Excel Course

Learn all of the most complex features of Microsoft Excel in this advanced training course.

- Understand cell management, including cell locking, auditing, and hotkeys
- Learn special formatting for calculating dates
- Use advanced functions, such as nested IF statements
- Learn advanced analytical tools for data consolidation, conditions to exclude data, and PivotCharts
- Use advanced database functions, such as MATCH, VLOOKUP-MATCH, and INDEX-Double MATCH
- Record macros and relative reference macros for ad-hoc reporting
- Create a project that applies key concepts from the class

SQL Level 1

- Understand core database concepts, including tables, rows, columns, and various types of SQL
- Connect to databases and navigate SQL Server Management Studio using tools such as Object Explorer and Query Editor
- Write SELECT statements to retrieve data, specify columns, sort results, and remove 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 more 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.

- 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

- 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

- 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, pivot features, and filters
- Build interactive dashboards and stories that combine multiple views for dynamic storytelling
- Format and publish your visualizations to Tableau Online, 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 Online distribution