

Data Analyst (code: LC-ANALYSIS)

Overview

The idea of the course is to present a wide range of tools and techniques for data analysis and working with databases. The whole course takes place in the form of a workshop - participants have the opportunity to practice the learnt techniques on realistic data, similar to those they may encounter in their professional practice. The course covers: - the most important Excel tools and techniques related to data processing (including Pivot Tables, Solver and Analysis ToolPak) - statistical methods of data analysis - data visualisation and creating interactive visualisations in Excel - using databases based on MS Access and MS SQL Server - SQL database language All classes are conducted with computers and have a workshop character.

Duration

64h

Agenda

Excel as a tool in data analysis

1. Using Excel effectively
 - Keyboard shortcuts
 - Naming cells
 - Tables
2. Formulas and most commonly used functions
 - Logical functions
 - Search functions
 - Decision support functions
 - Mathematical and statistical functions
 - Formulas and array functions
3. Preparing data for analysis
 - Creating tables – Good practice
 - Viewing data: auto-filters and advanced filter
 - Removing duplicates
 - Text as columns tool
 - Text functions
 - Eliminating data errors
4. Collaboration in Excel and creating worksheets for other users
 - Data validation
 - Protecting a worksheet and locking cells
 - Hiding formulas and securing a worksheet
 - Creating your own forms and using formants
5. Pivot tables
 - Creating a pivot table
 - Modifying a pivot table
 - Filtering and sorting
 - Slicers
 - Grouping data
 - Benchmarking using a pivot table
 - Fields and calculation elements
6. Extending Pivot Tables – Power Pivot
 - Adding Excel tables to the model
 - Creating joins between tables

Ask for details

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Coming courses

2025-03-01 (Online (English))

- Pulling data from other sources into the data model
- Creating hierarchies
- Formatting data
- Sorting, filtering and hiding data
- 7. Situational analysis and optimisation
 - Scenario analysis – Scenario manager
 - Search for a result
 - Solver
- 8. Using external data
 - Importing data from external databases (MS Access, SQL Server)
 - Importing data from text files
 - Importing data from websites
 - Exporting data
- 9. Collecting and transforming data using Power Query
 - Importing data (e.g. from the Internet and databases)
 - Preparing data for analysis – Introduction to M language formulas
 - Transforming reports into a form enabling further analysis
- 10. Visualizing data with conditional formatting
 - Using built-in templates
 - Creating rules based on formulas
 - Illustrating shares, discrepancies and exceptions

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Coming courses

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Data visualisation

1. Data visualization with charts
 - Types of charts and their uses
 - Chart styles – Built-in and custom charts
 - Irregular charts
 - Charts based on grouped data
 - Frequency charts
 - Time charts
 - Pivot charts
2. Interactive scenario analysis – Dashboard
 - Control of report parameters using formants
 - Charts with selectable series displayed
 - Coupling of tables and pivot charts using slicers

Statistical methods

1. Analysis ToolPak - launching and usage
2. Introduction to statistical methodology
 - Basic concepts: population, sample, random variables, hypothesis, statistical significance
 - Sampling – Principles of data collection
3. Descriptive statistics
 - Basic functions and descriptive statistics: mean, median, variance, standard deviation, skewness, kurtosis
 - Frequency, relative and cumulative frequency, quantiles
 - Histograms and resolution series
 - Trend analysis using graphs
4. Mathematical statistics
 - Basic concepts: probability, distribution, most frequently used distributions (normal, exponential, t-Student, chi-square)
 - Generation of random numbers with different distributions
 - Most important statistical tests in applications: t-Student test, z-test, F-test, chi-square test, analysis of variance
 - Searching for potential relations between data: covariance and correlation
 - Calculation and interpretation

- Trend analysis and prediction: regression analysis
 - Data waveform analysis and forecasting – Moving average, time series smoothing, exponential smoothing
5. What's next?
- Presentation of data mining methods using machine learning

MS Access

1. Introduction to Microsoft Access 2016
 - Uses and capabilities of the program
 - Building Access databases: forms, tables, queries, reports
 - Basics of using ready-made databases created in Access
 - Import/export of data between Excel and Access
 - When to use Access and when to use Excel?
2. Fundamentals of database design
3. Creating tables
 - Data types
 - Relationships between tables, foreign keys and primary keys
 - Default values
4. Queries
 - Query Wizard
 - Query Design View
5. Forms
 - Form Wizard
 - Form Design View
6. Reports
 - Report Wizard
 - Report Design View
7. Printing data and reports

SQL language in Access and MS SQL Server

1. Relational databases – basics
 - The concept of relations
 - Table, row, column
 - Key, primary key
 - Foreign keys and relationships between tables.
2. Basic views and operations in a database program (on the example of MS SQL Server and MS Access).
3. SQL Language
 - Simple Queries – SELECT structure
 - Functions and operators
 - Row selection – WHERE clause
 - Ordering of data – ORDER BY clause
 - TOP clause
 - Joining multiple tables
 - Row grouping
 - Aggregating functions
 - Selecting groups of rows – HAVING clause
 - Subqueries
 - Theory and multiplicity operations
4. Database schema
 - Data types
 - Creating tables – CREATE TABLE
 - Consistency ties
 - Row autonumbering.
5. Adding and modifying data
 - Adding data – INSERT

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- Modifying data – UPDATE
- Deleting data – DELETE

Target audience and prerequisites

The participants should have the basic knowledge of Excel, no knowledge of data analysis is required.

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Certificates

Course participants receive completion certificates signed by ALX.

Locations

- Warsaw (English) – Jasna 14/16A
- Online (English) – your home, office or wherever you want
- any other location (London, UK, EU) on request

Coming courses

2025-03-01 (Online (English))

Price

999 EUR

The price includes:

- course materials,
- snacks, coffee, tea and soft drinks,
- course completion certificate,
- one-time consultation with the instructor after course completion.