«MICROSOFT EXCEL: ENHANCED OPTIONS», 5 days

COURSE OBJECTIVE:

Development of professional competencies in Microsoft Excel enhanced options including PowerPivot, PowerMap, M language, and PowerQuery.

ACQUIRED ABILITIES:

- Use Microsoft Excel enhanced options to create tables and databases;
- Apply Microsoft Excel in various spheres of economy, personal and professional tasks solving;
- Master methods and techniques of working with Microsoft Excel enhanced options - Power Pivot, M language and PowerQuery;
- Understand main principles of working with add-ins for simultaneous data processing;
- Create consolidated reports, workbooks, and format data;
- Calculate without performance loss;
- Search and sort out available data with enhanced options;
- Present data in graphic format "3D mapping";
- Design an activity with ICT and Microsoft Excel enhanced options such as Power Pivot, M language and PowerQuery;
- Practice special modules and options of Microsoft Excel for real tasks solving.

COURSE CONTENT:

Module Name	Content
PowerPivot: Introduction	Power Pivot features. Power Pivot add-ins. Data import from: Excel files, CSV text files. Relational databases: Access, SQL-server. Multi-dimensional sources: Microsoft Analysis Services (OLAP-cube). Data filtering. Model management and relationships creation.
Source processing for PowerPivot model with Power Query	Create a query from text files and Excel books. Work with a query data: edition/mapping, calculated fields creation, results updating, queries addition – getting of single consolidated source, query results addition to PowerPivot model, results removal.
Calculations in PowerPivot sources	Create a computed column with DAX-formulas simple calculations. Categories functions: date and time, logic, mathematical, textual, Filter. Create calculated fields.
Reporting	Reporting: PivotTable, PivotChart, chart and table, Two charts, Four charts. Hide/show fields and tables. Data sets creation and management. Creation of

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	user's hierarchy for reporting. Data filtration: filters, slices, timeline. Filtering reports. Performance indicators creation and management.
Data visualization – 3D mapping (PowerMap)	Reporting on 3D maps. Layer creation: mapping add-ins, selection of layer visualization, data filtering, layer add-ins, change of map interface, visualization with scenes, and working with multiple layers. Video creation from reporting.
Final PowerPivot project: tasks solving	Practical tasks solving with different options.
PowerQuery fundamentals. Data loading	The function of Power Query for working with Excel and Power add-ins. Power Query interface. Multiple data source connection: text, MS Excel files, databases, WEB (Internet), XML files. Query structure. Simple transformations. Results loading: choosing and changing of loading type, default setting. Query update: manual or auto.
M language (Power Query Formula Language)	The structure of query algorithm and M language syntax. Data types. Simple data types. Compound data types: tables, lists, notes. Data types transformation. Conditional statements. Errors handling. Operation with Lists and Tables.
Queries parameterization	Query management through Excel sheet. Parameter table in Excel: creation and use.
Data structure transformation	Actions with data: removal, substitution and separation. Text, numbers and dates transformation. De-duplication. Tables transformation: Pivoting, Unpivoting, transposing, grouping. Built-in and user defined functions.
Multi-query operation	Concatenate. Append. Grouping.
Data consolidation: tasks solving	Automatic consolidation of binary data: text files, Excel files. Normalized data consolidation: a query creation, query transformation to variable function, creation of a query for consolidated data. Data consolidation with transformation of data structure: development of structure normalization query, transformation to function, creation of a query for consolidated data.