«ADVANCED MICROSOFT EXCEL», 5 days

COURSE OBJECTIVE:

Development of professional competencies in matters of Microsoft Excel advanced functions application including powerful calculation means, analysis and information visualization.

ACQUIRED ABILITIES:

- Apply advanced functions of Microsoft Excel for tables and data base creation;
- Apply Microsoft Excel in economical, personal and professional tasks solving;
- Master the methods of working with advanced and enhanced Microsoft Excel functions;
- Understand main principles of working with built-in functions;
- Create tables, workbooks, and format data;
- Perform necessary calculations with special text, logic, data operation and analysis functions;
- Search and sort out data by accessibility aids;
- Present data in graphic format;
- Apply data functions for analysis and forecast;
- Design activities using information and communication technologies and Microsoft Excel advanced functions;
- Use special modules and functions of Microsoft Excel for practical tasks solving.

COURSE CONTENT:

Module Name	Content
Big tables work: analysis, data validation, trouble-shooting, Pivot tables	Tables creation and maintenance. De-duplication. Data sorting by one criterion, multilevel sort, and by formatting. Data filter: AutoFilter, slice, roll-up, consolidation. Creation of "Smart tables".
Application of built-in functions	Different reference types, sheets and workbook pairing. Built-in functions: math functions (conditional summing, results rounding), aggregation functions (computation of quantity, average, minimal and maximal values with the following conditions – COUNTIF, AVERAGEIF, MINIF, MAXIF), logical functions (IF, IFS, and/or SWITCH, IFERROR), text functions (bundling (CONCAT, CONCATENATE, BUNDLING), and data decomposition, check-out of required symbols (LEFT, RIGHT, MID), functions for dates work (TODAY, DAY, MONTH, YEAR, NETWORKDAYS, DATEDIF).

	Functions of text manipulation (LEFT, RIGHT, MID, TRIM, CLEAN, CONCATENATE).
Nested functions: "Vertical Lookup", "Horizontal Lookup"	Study and applicability of reference and lookup functions: VLOOKUP, HLOOKUP
Conditional format with formulas. Data protection and collaboration features	Built-in rules application: column chart, color scale, set of symbols. Development of formatting rules using formulas. Data protection with password for single cell. Different access modes, formulas hiding. Data input checking. Simultaneous collaboration with one file, changed data restoration.
Graphics in Excel: diagrams and sparklines	Main types of diagram. Base diagram and sparklines. Complex diagrams: cascade chart "waterfall", Gantt chart, Tornado diagram, calibration diagram Thermometer. Dynamic diagrams with switch on/off of data series. Pipeline, maps, Pareto line.
Data analysis: "Arrays and References" built-in functions	Use of array formulas in simple calculations, formula changing. Two-sided search with MATCH and INDEX functions, data mining by several criteria, INDIRECT function for processing of one or several sheets data. Data mining with ROW, COLUMN functions. Table transposition with TRANSPOSE, INDIRECT, ADRESS functions. OFFSET function.
Data prediction	Use of statistic function, correlation-regression analysis. Time series: trend determination, trend development, seasonality in prediction.
"What if" analysis and optimization	Application of Data table tool for development analysis with 2 variables. Situation assessment and strategy selection by scenarios. Single-objective task solution by goal seek. Multi-objective problems solving by Solver add-in.
External data processing	Introduction to OLAP analysis. Pass through external database and data cube comparison. OLAP database cube connection. OLAP PivotTable.