Tosa Skills Framework

Excel 2019

Overview

Introduction
to Tosa Skills Framework

For Tosa Assessment and Certification

Tosa® (Test on Software Applications)

Tosa assessments and certifications will determine and validate a candidate's proficiency and skill level in software applications used in a professional environment. Tosa assessments and certifications are designed to validate individuals' digital skills (students, trainees, employees, or jobseekers) in supporting their employment, professional or academic objectives.

Tosa assessments and certifications employ the Adaptive Testing methodology, which creates a personalized testing experience adapted to a candidate's skill level for a selected software application. The score is based on the Item Response Theory using a 3-parameter logistic model, like the GMAT scoring method. Adaptive-based testing selects questions that challenge candidates to the limit of their knowledge and abilities.

Tosa Skills Framework Objective

This Tosa framework provides an overview of the subject areas being assessed during the Tosa Assessment and Certification exams. The Tosa validates candidate proficiency in the most popular professional Office software programs using a score on a scale from 0-1000 for the Certification Assessment, and a score divided into five levels, from "Beginner" to "Expert," for the Diagnostic Assessment.

The objective of this document is to present an overview of the technical skills associated with each of the four main Microsoft Excel domains within each proficiency level. This information will also support educators and trainers in tailoring their training program to achieve desired proficiency levels.

Unique Tosa Scoring

The Tosa assessments and certifications are based on a unique score, divided into five levels.

- ranging from 1 to 1000 for the certification.
- divided into five levels, from Beginner to Expert, for assessment.

Tosa® levels	Corresponding Tosa® score	Certification status & documents issued
Expert	876 - 1000	Certification earned - diploma & Credly digital badge issued
Advanced	726 – 875	Certification earned - diploma & Credly digital badge issued
Productive	551 – 725	Certification earned - diploma & Credly digital badge issued
Basic	351 – 550	Certification earned – diploma issued
Beginner	1 – 350	Certification failed - certificate of completion issued

Excel domains and subdomains

Methods	■ Knowing the software environment and using the main functions ■ Using editing tools ■ Organizing workbooks/worksheets/tables
Functions	■ Handling formulas ■ Using calculation functions in formulas ■ Identifying and inserting database calculation functions
Data manipulation	■ Creating and handling graphs ■ Creating and editing pivot tables ■ Using data management features
Formatting	■ Applying and handling conditional formatting ■ Creating, and editing digital formats ■ Formatting data in a workbook (formulas, texts, and graphs)

About the Excel certification

The Tosa Excel Certification relies on a database of more than 270 questions. It is composed of 35 questions and lasts 1 hour. The algorithm adapts to each answer of the candidates to adjust the difficulty level of the questions until they reach the exact definition of the candidates' level by calculating the limit of their high skills.

Since the test is adaptive, the series of questions that each candidate gets is unique for each test. This uniqueness allows for a more accurate evaluation of the candidate's level. It also limits cheating and the memorization of questions on different passages.

Our platform allows individuals to take the certification in class, in an approved testing center, or remotely via our integrated asynchronous online proctoring solutions.

Our remote proctoring solutions provide added flexibility for both the administrator and the candidate, allowing the certification exam to be taken anywhere, at any time. The candidate only needs an internet connection and a computer equipped with a working webcam and microphone.

Candidates receive a numeric score out of 1000 points associated to a proficiency level on a five-level scale. Candidates who score between 1 and 350 points don't earn the certification. They will not receive a diploma but a certificate of completion. Candidates who score 351 points or above earn the certification. They will receive a diploma by email within five (5) business days. If candidates score 551 points or above, they will also be eligible to a Credly digital badge.

There is no requirement to be eligible to take the exam, but our recommendations to be well prepared on exam day are:

- Take at least one Tosa Excel adaptive assessment to estimate your level and get familiar with the test format
- Use free practice tests on our website for training
- Follow e-learning or training courses (average duration per level is between 10 and 15 hours per certification so around 150 hours total)

Tosa certification diplomas are valid for three years from the date of issue as skill levels evolve or decline over time, depending on the use of the software. New software and software versions are released every year, and skills must be updated. We cannot legitimately certify a digital skills level for more than three years. Limiting the certification validity reinforces the need for life-long learning and professional development.

Tosa certifications can be retaken when it is expired. Earners willing to improve their score and level can also retake the exam at any time.

Level 1 – Beginner User

Between 1 and 350 points

The Beginner Proficiency is set for a score from 1 to 350, which is the lowest Tosa score category. Achievement of a Beginner score defines little or limited knowledge of the Excel application, including the application's basic functions and features, highlighting the inability to use the application in a professional environment.

Overview

Domains	Skills Assessed
Methods	‣ Open a workbook ‣ Save a workbook ‣ Set a print area of the workbook ‣ Identify the interface ribbon tabs ‣ Identify rows and column names ‣ Identify what are workbooks and worksheets ‣ Copy and paste an image to the clipboard
Functions	‣ Enter a simple formula in a cell ‣ Perform addition, subtraction, division, or multiplication in a formula ‣ Identify the correct order of operations ‣ Enter a time in a cell ‣ Insert a SUM function ‣ Recognize the ERROR symbol
Formatting	‣ Recognize a bar chart or pie chart ‣ Use conditional formatting ‣ Select the best chart to represent a set of data ‣ Format table text with bold, italics ‣ Format table color ‣ Format a table with borders ‣ Apply, define, and modify a cell
Data Manipulation	‣ Perform a simple sort ‣ Filter data in a table ‣ Insert a simple graphic object

Level 2 – Basic User

Between 351 and 550 points

Prior to the acquisition of the skills of the Basic level, the candidate will have mastered the skills of the Beginner level.

Methods

Workbook operations

Candidates demonstrate a basic knowledge of the Excel environment; they can open the Excel workbook, work through columns and rows, and are familiar with the options available on the interface ribbon.

Basic actions on workbooks such as "open", "save" and "print" are competently undertaken.

Candidates can modify a workbook and the Excel environment. They can save a file with a new name, set a print area, and change columns width and rows height. They can insert rows, columns, and cells, and can perform cut-and-paste operations.

Business application: in a professional context, these skills allow, for example, a sales profile to consult and modify follow-up tables or sales action plans.

Functions

Calculations and formulas

Candidates can perform simple calculations, including entering formulas.

The Basic-User candidates can perform mathematical operations like addition, subtraction, multiplication, and division within a workbook and insert a time or sum in a cell.

Candidates are expected to know common formulas such as IF, MAX, MIN, SUMIF, and COUNTIF.

Business application: in a professional context, these skills allow, for example, a sales profile to master basic formulas (simple calculations, concatenation, percentages, etc.) to create a simple sales table.

Formatting

The Basic-User candidates are familiar with formatting that is unique to Excel, such as indentation of cell contents and basic number formats, and formatting that is common across the Office suite, such as styles, borders, background color, and font color.

They can also use the Format Painter tool to copy formatting.

Business application: in a professional context, these skills allow, for example, a sales profile to organize spreadsheets as a customer management tool by putting their data in table form, using sorting and filtering (simple and advanced), and exploiting tools such as "Subtotal".

Data Management

Charts

The Basic-User candidates are expected to be able to represent a data series via a simple chart, create a data series, and insert a line, pie, bar, or doughnut chart.

Basic-Users can differentiate chart types and know which chart will best represent a given data set.

Sorting data

The Basic-User candidates can sort worksheet data via the Excel AutoFilter; they can filter data in alphabetical or non-alphabetical ascending and descending order.

The Basic-User candidates recognize the Quick Analysis tool and know how to use it for simple options.

Business application: in a professional context, these skills allow, for example, a sales profile to manage data to extract, sort, and classify customer data, to draw up graphs to monitor and/or track sales.

Overview

Domains	Skills Assessed
Methods	**Workbook operations:** ᵀ Open a workbook ᵀ Save a worksheet ᵀ Print gridlines. ᵀ Change range names ᵀ Identify page layout settings ᵀ Change column width ᵀ Insert and delete a column ᵀ Change row height ᵀ Insert and delete a row ᵀ Insert and delete a cell ᵀ Save a workbook with a new name ᵀ Copy and move a worksheet to another workbook
Functions	**Calculations and formulas:** ᵀ Apply the MAX function ᵀ Apply the MIN function ᵀ Apply the AND function

	⅂ Apply the OR function
	⅂ Apply the IF function
	⅂ Apply the SUMIF function
	⅂ Apply the COUNTIF function
	⅂ Identify the difference between absolute and relative cell references
	⅂ Insert a date in a cell
	⅂ Insert headers and footers
	⅂ Use the Trace Error button
	⅂ Identify Common Formula Errors
Formatting	⅂ Format cells: color, font, bolding, alignment
	⅂ Indent formatting in cells
	⅂ Use different styles
	⅂ Use the Format Painter tool
	⅂ Change the font
Data manipulation	**Charts:**
	⅂ Create a chart in a worksheet
	⅂ Position a chart within a worksheet
	⅂ Identify the principal chart types: line chart, pie chart, bar chart, doughnut chart
	Sorting data:
	⅂ Recognize and read a pivot table
	⅂ Perform auto-sorting: sort in ascending/ descending order

Level 3 – Productive User

Between 551 and 725 points

Prior to the acquisition of the skills of the Productive level, the candidate will have mastered the skills of the Basic level.

Methods

General knowledge

Productive-Users can easily manipulate a large data range (more than 12 rows or columns), can use the shortcut keys to select and move the range, and are also familiar with the fill handle. They can also duplicate a worksheet and create workgroups.

Paste Special

The candidates are familiar with the Paste Special features, including the ability to paste values, transpose them and paste formats.

Saving and printing files

Productive-Users can save a file in PDF format and are aware of the compatibility rules between documents created in different versions of Excel. There is a good knowledge of the various print options, (printing of all or part of a worksheet). Selecting a print format (A4, Letter, etc.) and inserting a header or footer are demonstrated capabilities.

Business application: in a professional context, these skills allow, for example, an accounting profile to establish and organize documents (closing of accounts, audits) but also to be able to share them regardless of the size of the documents.

Functions

Master calculations

Productive-Users have good knowledge of Excel calculation methods and can distinguish and use absolute and relative references in formulas.

They can also copy a cell containing a formula, know how to use text in a cell, and understand the principal formula errors (#NAME?, #DIV/0!, #####, etc.).

Formulas

The Productive-Users candidates are competent with formula writing rules and can easily create long formulas containing several mathematical operators and referring to multiple cells, recognizing simple statistical functions such as (SUM, AVERAGE, MAX, and MIN) and can use them easily.

Demonstrable knowledge of conditional formulas (IF, nested IF statements, AND, OR, etc.) is assessed and required for Productive-Users.

Business application: in a professional context, skills in the use of formulas (sum, average, percentage, ratio, calculation with dates...) allow, for example, an accountant profile to calculate the provision for paid vacations, establish a depreciation table, or update a provision.

Formatting

Cell formatting

Productive-Users validate a strong ability to easily manipulate the principal cell content formats (text, scientific, standard, percentage, currency, date) and use numeric separators, merge cells, change the alignment of a cell's contents and copy formatting.

The candidates demonstrate a good knowledge and ability with conditional formatting and can apply specific formatting to high and low cell values, including spell-checking a workbook and applying suggested corrections.

Creating and formatting a table

The Productive-Users candidates can create a table from a data range and apply a table style.

Inserting graphic objects

The candidates can insert and move graphic objects such as pictures, shapes, and SmartArt.

Business application: in a professional context, these skills enable an accountant to format a table and present figures to prepare a report and a dashboard from an accounting balance. They manage the display of databases: Freeze panes, Split, New window...

Data Manipulation

Chart formatting

Productive-Users can format a chart, enlarge, or shrink it, change the colors of a represented data series, insert a title or legend, or edit data labels.

Pivot tables

Although not pivot table experts, the Productive-User candidates understand the utility and purpose of such tables and can recognize and analyze the data.

Data

The Productive-User candidates can find, replace, and select data (including selections based on formatting). They use data AutoFilters (numeric or text filters), in a workbook or a table and demonstrable knowledge of the Goal Seek function. They can extract data from a column using the Flash Fill tool.

The Productive-User candidates know how to use the Quick Analysis tool for simple options.

Business application: in a professional context, these skills allow an accountant to use subtotals, sorting, filters, and logical functions such as IF, AND, and OR, to organize his tables. The accountant can also build a database and highlight significant facts from the annual accounts thanks to the creation of graphs and dynamic tables.

Overview

Domains	Skills assessed
Methods	**General knowledge:** ⅂ Customize the ribbon tabs and the toolbar ⅂ Split the window ⅂ Set a page layout **Manipulating a large data range:** ⅂ Select and move a cell range ⅂ Move and copy a worksheet ⅂ Work with workgroups **Paste Special:** ⅂ Paste and transpose values ⅂ Apply a mathematical operation to pasted cells
Functions	**Calculation methods:** ⅂ Identify and use relative and absolute references in a formula ⅂ Copy or move a formula ⅂ Use text in a formula ⅂ Know the main formula errors: #NAME?, #DIV/0!, ##### **Functions and common formulas:** ⅂ Create long formulas with several mathematical operators ⅂ Use simple statistical functions: SUM, AVERAGE, MAX, MIN ⅂ Use conditional formulas: IF, SI, nested IF statements, OR, AND
Formatting	**Formatting:** ⅂ Apply conditional formatting ⅂ Centre text across several columns ⅂ Insert SmartArt ⅂ Insert graphics ⅂ Apply a theme to a table ⅂ Use Flash Fill ⅂ Merge cells ⅂ Create Sparklines
Data manipulation	**Charts:** ⅂ Format via chart styles

- Resize a chart
- Insert and modify chart titles and legends
- Insert a chart's data series
- Print a chart

Pivot tables:

- Recognize a pivot table
- Analyze pivot table data
- Sort table data in a worksheet or a table
- Find, replace, and select data (based on values or formatting)
- Use advanced filters

Goal Seek:

- Know when and how to use Goal Seek

Level 4 – Advanced User

Between 726 and 875 points

Prior to the acquisition of the skills of the Advanced level, the candidate will have mastered the skills of the Productive level.

Methods

Customizing the environment and the display

The Advanced-User candidates have comprehensive knowledge of the Excel environment, demonstrating an in-depth knowledge of Excel printing and page layout options and using the view (Normal, Page Layout, Page Break, Custom) that is most appropriate for the task being undertaken. The Advanced-User candidates validate their knowledge of the workbook environment and the Navigation Pane and confirm their abilities to split worksheets, customize the interface by creating tabs or hiding those that are less useful, including the display of the Developer tab and customize the Quick Access Tool Bar, as well as keyboard shortcuts.

Backstage view, file formats, and file protection

The Advanced-User candidates have advanced knowledge of the File tab, managing files, and their associated data, where metadata or hidden personal information can be identified as well as pin files to the recently used files list so that they stay visible. They can also demonstrate the ability to customize how files are saved, protect a worksheet or workbook, and password-protect a workbook.

Task automation

The Advanced-User candidates can automate some Excel tasks, creating and editing a workbook template, whilst also configuring auto-corrections to accelerate the input of repeating words or expressions; they can also record and run a simple macro and can create custom lists.

Business application: in a professional context, these skills allow, for example, a logistics manager to adapt the display of tables to their needs according to their size. They can also use macros to automate certain tasks.

Functions

Calculations

The Advanced-User candidates master all types of calculations, even the most advanced, demonstrating the ability to use multi-sheet and multi-workbook formulas with ease. They use Error Checking, Trace Precedents, Trace Dependents, Show Formulas and Evaluate Formulas features. They can also competently use Name Manager to manage the names of cell ranges.

Functions

The Advanced-User candidates have advanced knowledge of formulas and functions. They use the Function Library to access complex functions and view their syntax. The Advanced-Users master mathematical functions such as ROUND or INT and display a good understanding of advanced search functions such as INDEX and MATCH, possessing excellent knowledge of text functions, especially LEFT, RIGHT, and MID, the search functions REPLACE and REPLACED, date functions (TODAY, DAY, MONTH, WEEKDAY, etc.), time functions.

They can perform calculations based on dates, count occurrences of a number or text in a range (COUNTIF), generate random numbers (RAND), rank a number (RANK), and perform simple search functions (VLOOKUP, HLOOKUP); CONCATENATE.

Database calculations

The Advanced-User candidates are highly competent in database calculations and database functions such as DCOUNT, DCOUNTA DSUM, DAVERAGE, DMAX, DMIN, COUNTIFS, SUMIFS, AVERAGEIFS, displaying the ability to return a subtotal in a list or data range (SUBTOTAL). They are also familiar with the SUMPRODUCT function and create array formulas.

<u>Business application</u>: in a professional context, the use of complex formulas allows, for example, a logistics manager to control stocks and analyze sales.

Formatting

Formatting and page layout

The Advanced-User candidates master formatting and page layout tools, configuring auto-formatting as well as conditional formatting. They display efficient use of workbook themes, margin changes, and orientation of a worksheet, manage page breaks and insert a background, footers, and headers.

Excel graphic objects

The Advanced-User candidates can insert and manage Excel graphic objects, pictures, SmartArt, shapes, or screenshots and can insert objects from other Office applications such as Word or PowerPoint. They display a good knowledge of how to use the Selection Pane, format graphic objects (color, shape, indentation, fill), modify shapes, and reorganize objects (bring forward, send backward, align, group, ungroup).

<u>Business application</u>: in a professional context, these skills allow, for example, a logistics manager to use Excel formatting tools to monitor the consumption of specific customer markets, convert the data in his tables into graphs, or monitor the invoices of suppliers.

Data Manipulation

Extended tables and databases

The Advanced-User candidates can manage large tables and databases, use advanced sort/filter functions, and can perform multi-criteria / customized sorting, and use complex filters to extract data. They also display a strong competence in defining table style options (header row, total row, striped rows, columns, first column, last column). They also know how to use segments to apply filters.

Chart analysis

The Advanced-User candidates are familiar with advanced chart tools and the full range of chart templates including advanced charts. They can perform advanced editing of charts, such as overlaying charts and changing axis units, using a secondary axis incorporating the use of trend lines.

Pivot table creation and analysis

The Advanced-User candidates master the analysis and creation of pivot tables, generating pivot tables from a database, manipulating various data sets, updating pivot table data, and formatting pivot tables.

Quick Analysis Button

Advanced-Users know how to use the Quick Analysis thoroughly.

Business application: in a professional context, these skills allow, for example, a logistics manager to anticipate future consumption, transmit supply needs to the purchasing manager, and manage stocks.

Overview

Domains	Skills assessed
Methods	**Customizing the Excel display:** 🍴 Display the Developer tab **Managing backstage view, file formats, and protection:** 🍴 Recover an earlier version of a workbook 🍴 Know file formats 🍴 Protect a worksheet or workbook 🍴 Insert an electronic signature 🍴 Customize the Quick Access toolbar **Automating Excel tasks:** 🍴 Run recorded macros

Functions	**Calculations, functions, and database calculations:**
	Use multi-sheet and multi-workbook formulas
	Edit a formula
	Create calculations based on dates
	Use mathematical functions (ROUND, INT)
	Use advanced search/lookup functions (INDEX, MATCH)
	Use text functions (LEFT, RIGHT, MID, EXACT, etc.)
	Use REPLACE and REPLACEB
	Use Date functions (TODAY, DAY, MONTH, WEEKDAY)
	Use Time functions
	Count occurrences of a number or text in a range (COUNTIF)
	Generate random numbers (RAND)
	Rank a number (RANK)
	Use search functions (VLOOKUP, HLOOKUP)
	Use CONCATENATE database functions (DCOUNT, DCONTA, DSUM, DAVERAGE, DMAX, DMIN, COUNTIFS, SUMIFS.)
	Return a subtotal in a list or data range
	Use of array functions (SUMPRODUCT) and array formulas
	Edit links
	Create formulas with AVERAGEIF functions
	Create formulas with DAVERAGE functions
	Use Name manager advanced options
	Use formula-error checking
	Evaluate formulas
Formatting	**Formatting and page layout:**
	Insert a screenshot
	Master Selection pane
	Display cell contents in a shape
	Insert symbols / Insert Special characters
	Graphic objects:
	Arrange objects
	Apply advanced manipulation of graphic objects
	Insert Form Controls

Data Manipulation	**Tables and databases:** • Use slicers • Master Goal Seek • Master data consolidation • Complete multi-criteria sort • Complete customized sorts • Use complex filters to extract data • Convert an excel table data range • Create and edit a drop-down list • Use Data Validation tool **Chart manipulation:** • Create complex charts • Master formatting graphic objects • Master graph overlays • Add secondary axis and trend lines **Pivot table creation and analysis:** • Create pivot tables • Manage pivot tables • Use advanced filters • Format pivot table • Select, copy, move and delete pivot tables • Insert a timeline • Remove duplicates

Level 5 – Expert User

Between 876 and 1000 points

Prior to the acquisition of the skills of the Expert level, the candidate will have mastered the skills of the Advanced level.

Methods

Customization and automation of the Excel environment

The Expert-User candidates possess complete mastery of the Excel environment: all tabs and their associated functions, including the Data, Formula, and Developer tabs. They are familiar with all Excel views and can link worksheets within a workgroup and can save workbooks in an arranged workspace.

Expert-Users can customize the Excel environment, including the Backstage view option, the Quick Access Toolbar, or the Excel ribbon tabs. They are familiar with the various Save / AutoSave options and printing options such as printing in color or printing several pages on a single sheet. They possess expert knowledge of the Developer tab, can create complex macros, and have complete knowledge of file extensions.

Data review and sharing

The Expert-User candidates master the Excel functions associated with the exchange, protection, and review of data. They can import external data, view the connections to external data, and can update data as well as export and share it.

The Expert-User candidates fully understand all the options for protecting the workbook, protecting cells, sheets/workbooks, and allow or disallow modifications to a workbook. They display expert competency in the Review tab functions, such as translating sections of a workbook as well as inserting, deleting, and managing comments.

Business application: in a professional context, these skills allow, for example, a financial analyst to perfectly organize their files and their contents to be able to modify them and keep them in the appropriate format.

At this level, the candidate can train on the software.

Functions

Calculation methods

The Expert-User candidates have comprehensive knowledge of calculation methods using the advanced Name Manager Options and formula auditing features such as Error Checking and Evaluate Formula. They can use the Watch window and Calculation Options.

Writing and decoding complex formulas

The Expert-User candidates display expert competency in Excel formulas displaying application knowledge with array functions such as (INDEX, MATCH, OFFSET, etc.),

information functions (ISNA, ISNUMBER, ISBLANK, etc.), financial functions (PMT, NPER, RATE, etc.) and advanced date functions (NETWORKDAYS, WORKDAY, DATEDIF, etc.). They possess expert knowledge of the function library and can browse the library for new functions.

Business application: in a professional context, the use of specific complex formulas (INDEX, EQUIV, VPM(), NPM(), DATEDIF(), etc.) allow, for example, a financial analyst profile to analyze company balance sheets, to carry out comparative analyses of data or to establish in-depth studies in the event of a takeover or sale.

At this level, the candidate can train on the software.

Formatting

Editing and formatting

The Expert-User candidates master all the workbook formatting and editing tools and are thoroughly familiar with the numerous cell formats, presenting data as a map. They can Group and Ungroup data and insert subtotals via the Subtotal button, show or hide data elements, insert hyperlinks in a worksheet, and can also create custom lists.

Creating and editing forms

Expert-Users can create and edit forms, and insert form controls and ActiveX controls via the Developer tab.

Business application: in a professional context, mastery of Excel formatting tools allows, for example, a financial analyst to interpret the value of the company or to analyze the company's balance sheets, as well as to collect financial and economic information and format it.

At this level, the candidate can train on the software.

Data Manipulation

Calculation analysis and simulation

The Expert-User candidates master advanced data analysis tools such as data conversion and AutoFill. They can use the Remove Duplicates, Data Validation and Scenario Manager, and Solver tools.

Pivot tables

The Expert-User candidates master the creation and analysis of pivot tables, displaying a thorough knowledge of pivot table tools and options and can manipulate all types of data. They can show totals and subtotals, use summary functions, and are also thoroughly familiar with pivot table formatting, generating pivot tables, and the various ways to update pivot tables data.

Graphic analysis of data

The Expert-User candidates possess expert knowledge of chart types and know how best to present them including competent chart formatting and editing. They can easily edit data sources, manage chart axes and data labels, and can create complex charts such as a pyramid or Ombrothermic diagrams, and insert and customize Sparklines.

Business application: in a professional context, these skills allow, for example, a financial analyst to present data in the form of pivot tables or graphs. They choose the appropriate graph according to the nature of the data to be used.

At this level, the candidate can train on the software.

Overview

Domains	Skills assessed
Methods	**Excel customization and automation:** ⚑ Customize the Excel environment ⚑ Encrypt a workbook ⚑ Share/distribute a workbook **Data review and sharing:** ⚑ Convert a table to a normal range and subtotal-related data ⚑ Import Data form
Functions	**Calculations:** ⚑ Use the Watch window ⚑ Use calculation options ⚑ Use worksheet calculation functions **Generating and decrypting complex formulas:** ⚑ Master complex array functions (INDEX, MATCH, OFFSET, etc.) ⚑ Master information functions (ISNA, ISNUMBER, ISBLANK, etc.) ⚑ Master financial functions (PMT, NPR, RATE, etc.) ⚑ Use advanced date functions (NETWORKDAYS, WORKDAY, DATEDIF, etc.) ⚑ Master the function library
Formatting	**Formatting tools and editing forms:** ⚑ Insert form controls ⚑ Insert ActiveX controls ⚑ Insert hypertext links ⚑ Use custom lists ⚑ Use Name Manager advanced features ⚑ Master Paste Special options ⚑ Customize Sparklines
Data Manipulation	**Calculation analysis and simulation:** ⚑ Create a table of assumptions ⚑ Master Scenario Manager ⚑ Master the Solver tool: target and adjustable cells, constraints, results

Pivot tables:

- Comprehensive knowledge of pivot tables
- Use of totals and subtotals in pivot tables
- Update data in pivot tables
- Create and manage pivot table charts
- Format of a pivot table

Graphical data analysis:

- Read graphic analysis of data
- Apply data validation to cells
- Insert and customize sparklines
- Create pyramids
- Create ombrothermic diagrams