

Our Syllabus

Foundation

1 Excel introduction?

Point of Excel

Description of purpose and application of Excel – what it can do, why it's useful.

2 The Excel Interface

Understanding and working with the Excel interface.

The Ribbon

Purpose of Ribbon as control panel for Excel. Description of Ribbon Tabs (Home, Insert, Page Layout, Formulas, Data, Review, View,), their purpose and brief description of their contents. Quick access toolbar (what it is, not how to customize).

File tab

Purpose of File tab as governing document management and Excel settings (Options). How to create, save, open Workbooks. Under Save As, a brief explanation of backwards compatibility and other formats (e.g. PDF) save options. Skydrive, alternative online storage, and 'local' saving. Basic description of printing. Short description of Protect Workbook, Check for Issues and Manage Versions functionality (with reference to later units). Document properties. Short description of Options.

Spreadsheet and views

Description of elements of spreadsheet and their purpose. Possibility of multiple Worksheets/tabs. Resizing, minimising, closing the spreadsheet window. Zoom level bar. Spreadsheet views, which best suit which purpose, how to switch between them. Formula and Status Bars.

Customising the Quick Access Toolbar

Quick access toolbar and how to customize. Customizing the ribbon.

3 Basic Navigation & Editing

Selection and navigation

Moving around a spreadsheet (scroll bars), and the spreadsheet's 'extent' (maximum and as defined by cells with content). The Excel 'cursor' and how to select cells. How to select multiple cells. Basic use of Find on Home tab.

Entering text

Typing into cells. Distinct characteristics of text, numbers, dates.

Basic formatting

Making changes to column width. Borders and fills. Font colour and style.

Multiple Worksheets

Adding, naming, renaming, moving Worksheets. Moving between sheets (including shortcut).

4 Getting going

Purpose of this unit is to give a beginner something practically useful so tangible progress being made. Heavily interlinked with exercise.

A first spreadsheet

e.g. Introduce a spreadsheet with 3-column (list with two numerical dimensions, eg. products, sales volume, price) table which user can (i) navigate (ii) add more data to and (iii) change formatting of (e.g. of titles, etc).

Simple formulae

The idea of cell references, as at start of Cell References unit. Step by step instructions to reproducing a cell of the original table using a cell reference. Ditto copying the cell to reproduce a column of the original table. Ditto changing the formula to multiply the two data columns from the original table). + - * /. Brackets.

Basic functions

Concept of a function. SUM(), TODAY().

Orientation and efficiency: Your knowledge of the basics of Excel and the efficiency with which you interact with it

5 Editing

Copying

How to select and copy (Ctrl-C or right-click menu) cells to the clipboard, copying whole Worksheets; difference between cut and copy, and advice against using cut.

Pasting

Basics of how to (Ctrl-V or right-click menu); what's being pasted (cell content, formatting, result,..); paste special (values, formulas, transpose). Problems with pasting (mismatched source and destination area, merged cells, numbers formatted as text?).

Inserting, deleting and clearing

How to, including using Shift to insert cells 'between' columns/rows. Differences between clearing and deleting.

Fill

Fill handle and Flash Fill.

6 Viewing

Views

Normal, Page Break Preview.

Splitting the screen

Freeze panes, split windows, multiple windows (arranging, side-by-side or tiled viewing, synchronizing scrolling). Including examples of practical applications where the different methods help.

7 Spreadsheet structure

Grouping rows and columns

Grouping rows and columns (preferred to hiding); group layers and examples of good usage.

Changing cell shape

Row and column heights, merging cells, text direction, when text overruns into next cell (ie when the cell(s) to the right is/are empty)

8 Cell references

Relative references

References between cells, sheets and workbooks. How to connect cells, how to manipulate connected cells, how the cells behave. Ranges.

Fixed references

Absolute and partially fixed references to cells and ranges. F4 shortcut.

9 Named Ranges

Simple range names

Reasons for using Names. Setting a named range by overtyping cell references in the Name Box. Writing a formula that includes the Name just defined (including that Name will be suggested for inclusion in formula if start typing first letters of the Name). Using the Name Box to navigate to named ranges.

Managing named ranges

Using the Name Manager to create, delete and edit ranges. Example of updating a named range to take account of new rows being appended to a set of data. Pitfalls (loss of transparency on extent of range in formulae). Scope – Workbook/Worksheet. Transferring between Workbooks and pitfalls.

10 Basic Macros

Getting started

Security settings, enabling Macros, developer tab, Trust Centre, types of Excel file etc.

Simple recorded macros

Record macro; assigning shortcut key (or not) and name. Example recorded macro step-by-step. Relative references during recording. Example using relative references.

Practical applications

How to use recorder Macros to increase efficiency (e.g. for repetitive tasks). Assigning a Macro to a Quick Access Toolbar button.

11 Design

Importance

Why design important in increasing efficiency, reducing errors and aiding transparency.

Principles

e.g. make clear flow of calculation through spreadsheet (left to right through Worksheets; left to right and top to bottom within a Worksheet). Separation of input data, assumptions/parameters from calculations and from outputs. Starting on paper (or at least away from Excel). Structure of spreadsheet follows data. Separation of data and logic in cell formulae. Importance of protection.

Process

Potential models for undertaking design.

Other pointers

Highlight sort of function difficult to follow / hard to maintain – array formulae, OFFSET, links to other Workbooks... Elements that aid understanding (Named ranges, breaking down calculations step by step,

Templates

Templates and examples of good and bad practice

Administration: Your ability to manage and protect an Excel file and its contents

12 Customizing Excel

Simple settings

e.g. Enable Live Preview, font, default view, username.

Spreadsheet appearance & layout

Interface options, new Workbook definition (number of Worksheets), 'Advanced' section display options (just overview so user can cope when these have been altered on a spreadsheet they encounter – eg with gridlines hidden), customising the Quick Access Toolbar (as reference to unit 2 on the Excel Interface).

Formulae and calculation

Manual/automatic calculation only.

Error checking and security

Autocorrect. Brief overview of proofing, error checking rules under formulas, save and autorecovery settings, Trust Center (Macros)

Add-Ins

Concept. Solver, Analysis ToolPak. PowerPivot. Inquire.

13 Housekeeping

File naming

Naming conventions, version control, structuring folders (e.g. controlling order by prefacing names with a., b., ...).

Backup policy

Potential backup policies and methods. Built-in Excel features (AutoSave, Save backup etc).

Storage

C: Drive storage. Network storage. Cloud-based storage. Incl Skydrive. Google docs (just mention as potential way of sharing spreadsheets, and give reference to separate unit on Google docs spreadsheet functionality)

14 Connecting Workbooks

Basic techniques

Including dangers, importance of using names

Managing links

Edit links, updating external references, ...

Troubleshooting

Finding 'missing links', auditing tools re links.

15 Documentation

What to document

Where info / data has come from; what assumptions have been made/what they represent; what calculations do; changes made; ...

Methods of documentation

Separate documentation Worksheets, incorporating documentation into spreadsheet, spreadsheet structure aiding understanding, colour-keys, Styles, Comments, Track changes...

16 Protecting and Sharing

Protection

Why it's useful or necessary, locking cells, Worksheet protection, Workbook protections, allowing users to edit ranges.

Sharing

Permissions/access to folders & files, how to work with others on same files and different files (both in process terms and using Excel functionality; when not to use it, avoiding conflicts).

Sharing via the Cloud

Skydrive, other options, strengths, pitfalls and considerations.

How to share a file to collaborate with other users working on different machines, avoiding and resolving conflicts; protecting cells, sheets and workbooks.

17 Googledocs

What is Googledocs, why use Google Spreadsheets for spreadsheeting.

18 Excel troubleshooting

Common problems

Errors – build in checks at beginning not end, refer to checks as spreadsheet develops to narrow haystack dimensions (Watch window); Evaluate formula or split into component parts and check each element; Finding error in large quantity of data – keep halving to quickly isolate error; use retrospective data validation or conditional formatting to find problem cells. Edit Links for missing external references

Advanced techniques for complex problems

Inquire add-in to identify types of cell, broken links etc.

Data handling: How well you can manipulate different forms of data in Excel - sorting, cleaning and categorising it

19 Sorting & Filtering

Basic sorting and filtering

Sorting quickly, controlling order of precedence of sort, horizontal & vertical. Filters. Copying from filtered data (visible cells only – Excel version specific e.g. Go To visible cells only in earlier versions)

Intro to PivotTables

Intro and how to use to sort / filter content.

Advanced filter

To generate list of unique entries.

Sorting & filtering to check & clean data

How to use the techniques to find and remove typos in a flat file, and understand its dimensions.

20 Controlling user input

Data validation

For control / QA of data input.

Facilitating data entry

Data validation lists

IS- functions

Use to check data type (text/numeric etc)

21 Working with dates and times

Date and time formatting

Different date/time formats. Dates/times formatted as text.

Date and time maths

What the serial number is/means. Adding, subtracting and further manipulation of dates.

Basic date and time functions

NOW, TODAY; SECOND through to YEAR function.

Advanced date and time functions

e.g. calculating NETWORKING days

22 Working with text

Entering and formatting text

Entering text via formula bar or in cell (and Options setting to allow editing in cell). F2 to edit cell contents. General and Text number formats. Use of apostrophe to force interpretation as text. Carriage return within cells. Bold/italic, font, font size etc. Font colour (changing font colour for part of text within a cell) but with reference to later unit on cell formatting. Use of multiple columns to allow different formats to be applied easily to different layers of a hierarchy.

Extracting parts of text

LEFT, MID, RIGHT

Concatenating text

&. Inclusion of "fixed" text in concatenation (e.g. =A1&" "&B1)

Manipulating text

FIND and SEARCH, LEN, LEFT, MID, RIGHT functions used in combination; THREE case Functions; CLEANing and TRIMming; & and CONCATENATE

23 Lookup & Reference

Looking up information in a table

VLOOKUP/HLOOKUP (exact). VLOOKUP/HLOOKUP (approx.). Practical application of allocating records to categories (e.g. monthly sales categories 0-165=low, 165-270=medium,....).

Looking up information more flexibly

MATCH and INDEX

Advanced lookups

Intersections, right to left

24 Logical Functions

Automatic decision making

TRUE, FALSE and logical functions

Using logic to apply conditions

IF(,), IS- functions, nested IFs.

Error handling

Using IF, ISERROR, ...

Advanced logical tests

Matrix use of IF [ie SUM(IF) as an array function e.g
{=SUM(IF(Sheet2!A1:A50=Sheet1!A1,IF(Sheet2!B1:B50=Sheet1!B1,Sheet2!C1:C50)))}].

Data analysis: How well you can analyse and interpret data in Excel to produce useful results

25 Working with numbers

Basic maths

+_*/. Brackets and precedence. Powers.

Simple rounding

ROUND()

Advanced rounding

ROUNDUP(), ROUNDDOWN(), MROUND()

Coercion

Using text and TRUE/FALSE values as numbers

26 Summarising data

Totals and counts

SUM and COUNT and COUNTA

Other statistics

MAX/MIN/AVERAGE (incl. on status bar)

Conditional totals and counts

SUMIF and SUMIFS

Advanced conditional sums

SUMPRODUCT and arrays (SUM(IF)"/"superSUMIF")

27 PivotTables 1 – simple summaries

Uses of PivotTables

Summarising data (presenting database in terms of different subcategories).
Understanding data (understanding categories, spotting typos, understanding range of values).
Interpreting data (analysing to work out trends, areas of growth / profit / loss etc).

Basics of running PivotTables

Demonstrate how easy it is to create say a league table of Salesperson or product performance from large table of invoices. Demonstrate 4 different data areas

Filtering

Including top ten, Slicers

Sorting and grouping

Sorting, manual sorting, group dates, manual grouping

28 PivotTables 2 – manipulating data

Understanding data structures

Introduction to relational databases.

Layout and formatting

Importance of number format, different layout options, styles.

Value fields settings

When value fields are counted not summed. Special types of value fields, show values as running total, difference from.

GETPIVOTDATA()

Understanding what happens when you set up a reference to a part of a PivotTable.

29 PivotTables 3 – interpreting data

Slicers and timelines

Slicers used to manipulate multiple PivotTables

PivotCharts

Creating PivotCharts from PivotTables

Conditional formatting in PTs

Using conditional formatting within PivotTables including replacing numbers with graphics

Building an interactive dashboard

Using above techniques to create a dashboard

30 PowerPivot: Handling big data

Why PowerPivot is different to a normal PivotTable: size, data model (inclusion in 2013 standard Excel), DAX, KPIs

PowerPivot data tools

Connecting to data, managing multiple tables and connections, including data from within the Excel spreadsheet

31 Formula Auditing

Tracing calculations

Precedents and dependents including keyboard shortcuts.

Monitoring effect of changes

Formula evaluator and Watch window.

INQUIRE() Add in

Guide to functionality of INQUIRE and how to use it to create more reliable spreadsheets

32 Advanced Macros and VBA

Introduction

Recap / reference to earlier Basic Macros unit

Troubleshooting macros

Step in, turning on and off display, process, processor speed considerations, breaking down macros into steps, common problems.

Writing code directly

VBA editor

UDFs

Why and when might be useful, examples.

Program structures

Simple loops, Option explicit, working with variables, error trapping

Interactivity

Msgbox, inputbox, forms.

33 Modelling

What is a model?

Working definition, uses / applications.

Principles

What modelling is; modelling broken down into distinct stages; important principles - simplification, built-in checks; including a presentation-ready sheet

Techniques

Calculating growth with data points over several years; extrapolating that into the future; scenario modelling and optimisation; prioritisation (RANK); build process.

Presentation: Your ability to format spreadsheets and present results within them to communicate those results powerfully

34 Cell Formatting

Basic font formatting

Bold, italic, underline, colour, size,

Alignment

Including horizontal and vertical alignment, wrapping, merging, orientation, Alt-Return; consistent, sensible row heights & column

Styles

Use to make spreadsheets more readable (reference to Documentation unit). Improved consistency.

Formatting tools

Format painter, copy and paste, fill formatting.

35 Number Formatting

Types of number

Integer, currency, %, decimal, negative numbers, 000s, exponents – and Excel formats best employed.

Clarity and impact

Beyond basic formats (currency, general, %) how to maximise impact and clarity.

Custom number formats

Zero, negative numbers.

Advanced custom number formats (thousands, millions, conditions)

Options (indentation, comma separation, alternative ways of showing negative numbers – eg red in parenthesis – and zero – eg as a dash so zero clearly distinct from 0.0)

Number formats and styles. Templates.

For instance to differentiate types of cell (input, parameter, calculation, output).

36 Conditional Formatting

Basic conditional formatting

Changing format of cells depending on their value.

Graphical conditional formats

Including data bars as a format option.

Advanced conditional formats

Including conditional format formulae.

37 Graphs & Charts

Creating simple charts

Setting up simple charts

Editing charts

Editing charts to improve and control formatting.

Choosing the right chart

Building on PowerPoint course material.

Advanced charts

Mixed types, secondary axes, trendlines

What makes a good chart?

Principles and guidelines for communicating well with charts.

Sparklines

When useful, how to use.

Maps

When useful, how to use. Power View

38 Page & Print Setup

Displaying spreadsheets as pages

Page layout view, page breaks, print area,. Printing from multiple Worksheets (and that default will be to print only from active Worksheet). Headers and footers

Adjusting page setup

Margins, orientation, print area, fit to, backgrounds

Printing very large sheets of data

How to define.

Finally printing!

How to send what you want to print to the printer.