

# Excel Guide

An introduction to the basic functions of Microsoft Excel.

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# Getting Started

## Downloading Microsoft Office

Excel can be downloaded as part of your university Office 365 account. To do this, follow: [sruwdrilfhfrp 2lffrxqw](#) and login using your university email (e.g., [c1234567@newcastle.ac.uk](mailto:c1234567@newcastle.ac.uk)) and password, then 'Install Office'.

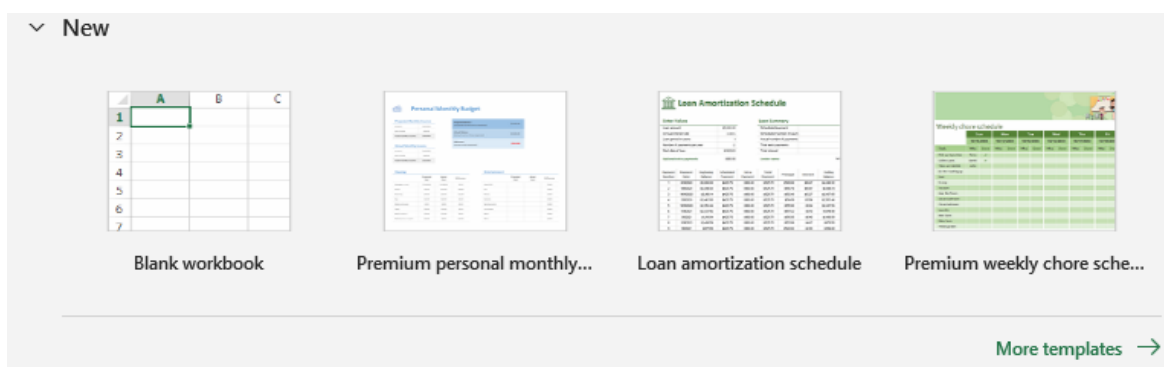


[Link to YT video once completed]

## Opening a workbook

Excel documents are called workbooks. To create a new workbook, open the Excel app, click **File**, and then click **New**.

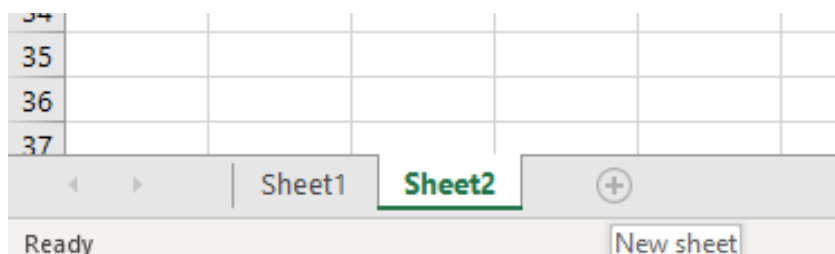
You can use **templates** available here, or open a **blank workbook**.



## Navigating between spreadsheets

You can create new sheets within a workbook by selecting the '+' button, at the bottom left of the sheet, and navigate between these by selecting different 'tabs'.

You can add as many sheets as you want to a workbook, or you can create new workbooks to keep your data separate.



## Data Entry

You can **input data manually** by clicking an empty cell and typing in your text or number.

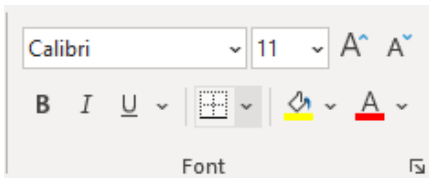
Press Enter or Tab to move to the next cell.

You can also **import data** from text files (.txt or .csv) files.

Cells are referenced by their row and column location on the sheet, so for instance, A1 is the cell at the intersection of the first column and row.

## Formatting

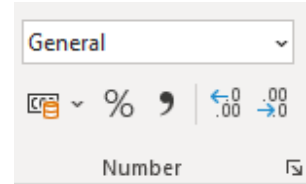
### Basic cell formatting



You can add/ remove cell borders, fill cells with colour, or change font formatting by selecting the **Home** Tab and the **Font** section at the top of the page.

### Number formatting

You can format numbers as currency/ percentages/ date/ time etc., or change the number of decimal places by navigating to the **Home** Tab and **Number** section.



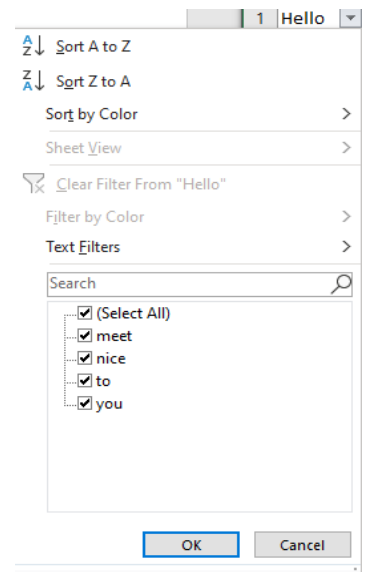
### Enabling sorting/ filtering

You can filter data by category, colour or text, you can also 'sort' columns A-Z/ highest-lowest etc.

To do this, navigate to the **Data** tab, then in the **Sort & Filter** group, click **Filter**.

Following this, a small arrow will appear in the selected header. Once clicked, the arrow will display a list in which you can make filter choices.

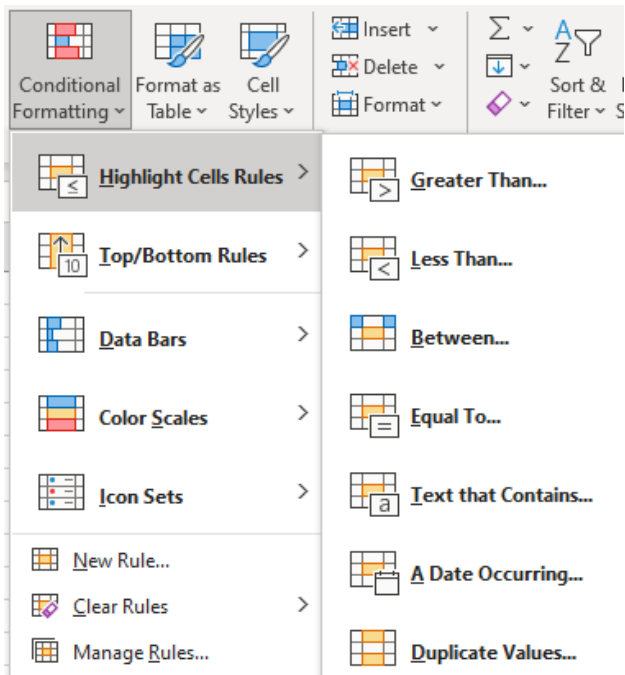
If you only want to see particular values, in the list, clear the **(Select All)** check box. This removes the check marks from all the check boxes. Then, select only the values you want to see, and click **OK** to see the results



## Conditional Formatting

Conditional formatting allows you to highlight cells/ data that fit certain criteria.

To get started, select the cells you want to apply conditional formatting to. Then navigate to **Home** tab, click **Conditional Formatting**.



Once you select a filter, you will be asked to define the rule(s) that dictate which cells are highlighted, for instance if data is greater/ less than/ between or equal to specified values.

You can also set rules to highlight cells containing specified text, dates, or duplicates. Top/ bottom rules allows you to highlight a specified top or bottom percentage of selected data.

**Data bars** produce a visual scale symbolising relative cell value

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Initial	JK	RJ	LL	PO	BY	SH	MT	GT	OB	KC	AD	LW	NB
2	Test score /100	80	77	63	55	54	86	74	50	63	78	62	68	58

Similarly, you can use the **Colour Scales** feature to set colours to represent relative cell value

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Initial	JK	RJ	LL	PO	BY	SH	MT	GT	OB	KC	AD	LW	NB
2	Test score /100	80	77	63	55	54	86	74	50	63	78	62	68	58

# Calculations

## Basic formula and functions

In Excel, a formula can perform calculations or operations on values in selected cells. For example, =A1+A2+A3, will calculate the total of cells A1 to A3.

The **SUM function** totals values from a selection of columns or rows from your selected range.

e.g., =SUM(B2:G2) – Totals the values of row 2.

=SUM(A2:A7, A9, A12:A15) – Adds values from range A2 to A7, skips A8, adds A9, then adds from A12 to A15.

=SUM(A2:A8)/20 – Totals the column selection and divides this by 20.

## Calculating Averages, counting cells, trimming

The **AVERAGE function** should calculate the mean of selected range of cells

e.g., AVERAGE(B2:B11)

The **COUNT function** counts the number of cells in which numerical data is present

e.g., COUNT(B:B) counts all cells with numerical data in column B

The **COUNTA function** similarly counts cells within a specified range, regardless of data type, i.e., empty cells, and cells containing text.

e.g., COUNTA(B12:B75)

The **TRIM function** removes any extra spaces within identified cells.

e.g., TRIM(A2:A18) – Creates a duplicate column removing any blank spaces from A2 to A18.

## IF function

The **IF function** is often used when you want to categorise your data according to a rule.

e.g., =IF(B6<C6,"TRUE","FALSE")

This means that data at B6 is less than data at C6. If this logic is true, let the cell value read 'TRUE', otherwise, 'FALSE'.

You can also **embed formulas and functions** within IF formula.

e.g., =IF(SUM(B1:B10) > SUM(C1:C10), SUM(D1:D10), SUM(E1:E10))

This means that the total of B1 to B10 and C1 to C10, then it compares the sum. If the sum of D1 to D10 is greater than the sum of E1 to E10, then it makes the value of a cell equal to the sum of D1 to D10.

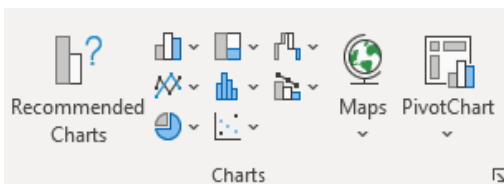
## More advanced analysis



For guides on more advanced calculations and operations, follow the link: [excelwithbusiness.com/blogs/news/15-excel-data-analysis-functions-need](https://excelwithbusiness.com/blogs/news/15-excel-data-analysis-functions-need)

## Graphics

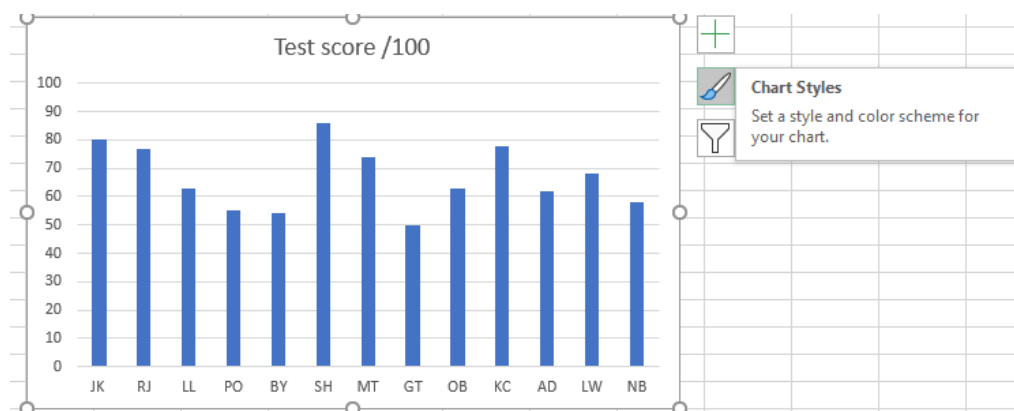
### Charts



To **insert a chart**, select the data and labels you would like to use, then go to 'Insert', and 'charts'.

Either use the '**recommended charts**' feature, which generates a series of potential charts, or **manually select** the chart type that suits you. This includes bar charts, scatterplots etc.

You can then **format the colour**, font etc. in excel by clicking on each of the features and editing them manually, or selecting the paintbrush on the right hand side of the chart, and selecting a premade template.



## Exporting Tables and Charts

You can save a table you have created in Excel by selecting the cells, and copy-pasting it into a graphics program, saving it as a picture. Alternatively, you can copy the cells directly into a word/ PowerPoint document etc.

You can save a chart by right-clicking it and selecting 'save as picture', or if you would prefer to continue editing this, you can copy and paste the graphic into a Word/ PowerPoint document etc.

## Further reading:



Microsoft has a great online guide overviewing the basic functions of Excel, available here: [support.microsoft.com/en-us/office/basic-tasks-in-excel-dc775dd1-fa52-430f-9c3c-d998d1735fca](https://support.microsoft.com/en-us/office/basic-tasks-in-excel-dc775dd1-fa52-430f-9c3c-d998d1735fca)



There are also some fantastic guides on YouTube available, this playlist is especially user-friendly and extensive:

[www.youtube.com/playlist?list=PLpQQipWcxwt-zyMUSRc4VBBs91biCcBo4](https://www.youtube.com/playlist?list=PLpQQipWcxwt-zyMUSRc4VBBs91biCcBo4)