Excel Basic Handbook for Criminology Students

Law Library Team
LawCrimLib@swansea.ac.uk
October 2017
Introduction

About spreadsheets

A spreadsheet consists of a grid containing rows and columns into which you can enter numbers and formulae to perform calculations. A calculation can be as simple as adding the values in two cells, or a complex formula.

You can also enter text, borders, shapes and images and create charts and graphs. The best thing about spreadsheets is that you only have to enter the correct figures and formulae – you don’t have to perform the calculations yourself.

A major advantage of using formulae for calculations is that if you need to make changes the formula ensures your results automatically update.

Useful terminology

A worksheet is a single sheet, or grid, on which you can enter text, numbers and perform calculations.

A workbook is a collection of worksheets. When you create a new document in Microsoft Excel, you create a workbook.

Below is a picture of a section of a worksheet. Each individual cell in the grid has its own unique cell reference according to its position. In this picture cell A1 is selected.
A block of cells is called a cell range. The range is denoted by the first and last cell references, separated by a colon (:). The picture shows the cell range B4:E7.

To access Microsoft Excel

- Click on the Swansea University Unified Desktop
- Click on Common Apps and then on Microsoft Excel 2016

Entering data in cells

To enter text or numbers in a particular cell:

- Click on the cell where you want the data to go.
- Type the data into the cell (words, numbers or formula)
- To move to a new cell press the Enter key on the keyboard, click on another cell with the mouse or use the arrow keys.

Good practice for entering tables of data

When creating a list or tables of data, you should avoid having any blank rows or columns within the data. When you use certain features and formulae, you will cause extra work and possibly introduce errors if blank rows and columns are used. But a blank row is allowed between the headings and the data.
**Editing and deleting values**

To replace a cell entry with a new value:

- Click on the cell
- Type the new value and press Enter

To edit a formula:

- Double-click the cell where you have entered the formula
- Delete or amend parts of the formula as necessary and then press Enter

If you decide you don’t want to make the change after all, either press the Esc key or click on the Undo button in the ribbon.

**Moving and copying cell contents**

Moving (cutting and pasting) and copying cell contents works exactly the same in Excel as it does in Word as they are both Microsoft products. You can either use the Copy and Paste icons in the Ribbon (as explained below) or right click using the mouse. Choose whichever method you prefer.

**Moving Cell Contents**

- Click on the cell that you want to move and click on Cut in the Clipboard on the Ribbon. There will be a wavy line around the now empty cell.
- Click on the cell you want to move the data to and click on Paste in the Clipboard.

**Copying Cell Contents**

- Click on the cell you want to copy and click Copy. There will be a moving border around this cell.
- Click on the cell to want to move to and click Return.

You can move and copy words, formulae and numbers using these methods.

**Formulae**

Using formulae for calculations is what makes Excel so useful so it is well worth learning how to do this. Without formulae Excel is just like a massive grid where you can keep data. Using formulae enables Excel to work like a calculator and automatically calculate totals and averages. If you later change data in any of the cells, the spreadsheet will automatically recalculate and update the answer. If you have created a chart, changing the data in the cell will also update the chart automatically.
Important points to remember about formulae

- Formulae always start by typing ‘=’ (equals) into the cell where you want the answer to appear.
- Use ‘+’ to add, ‘-’ to minus, ‘/’ to divide, and ‘*’ to multiply.
- It is possible to enter the formula by typing =D87+D88+D89+D90+D91 into the relevant cell but in order to reduce the chances of typing in the wrong cell reference it is better to use the ‘Point and Click method’ or the Sum Function.

Entering formulas using the Point and Click method

- Type ‘=’ into a cell to start the formula
- Click on the 1st cell to be added to the formula and press ‘+’
- Click on the 2nd cell and press ‘+’ again.
- As you do this you will see the formula being created in the cell.
- Continue doing this until all of the cells have been added into the formula and press Enter.
- The answer will then appear in the cell and the formula will be shown in the Formula bar above.
- To subtract, divide or multiply, follow the same procedure but replace ‘+’ with the correct operator.

The Sum Function

- The Sum Function adds together several numbers located in a single column or row.
- Click on the empty cell next to the column or row of numbers you want to sum (add up).
- Type ‘=SUM(‘ and click on the first cell to add and drag the cursor to the final cell and press the Enter key.
- The answer will appear in the cell and again the formula will appear in the Formula Bar.
- This will automatically add the final bracket ‘)’.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Czech Republic</td>
<td>45.5</td>
<td>46.6</td>
<td>47.2</td>
<td>45.5</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Denmark</td>
<td>10.2</td>
<td>10.4</td>
<td>10.5</td>
<td>10.7</td>
<td>10.8</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Estonia</td>
<td>3.5</td>
<td>3.6</td>
<td>3.5</td>
<td>3.4</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Ireland</td>
<td>11.9</td>
<td>12</td>
<td>12.2</td>
<td>12.3</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Greece</td>
<td>51.6</td>
<td>52.1</td>
<td>50.2</td>
<td>49.9</td>
<td>48.5</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Spain</td>
<td>190.1</td>
<td>195</td>
<td>198.1</td>
<td>202.5</td>
<td>209.2</td>
<td>994.9</td>
</tr>
</tbody>
</table>
**AutoSum**

If you want to add up all of the numbers in a column or row, AutoSum is very useful. AutoSum inserts the SUM function (which adds all the values in a range of cells) and selects the range of cells Excel thinks you want totalled. This is especially useful if there is a long column or row of numbers to be added together. AutoSum can be found on the right side of the Home tab or on the Formula tab as shown below.

- Click on the empty cell next to the column or row of numbers you want to sum (add up).
- Click on the AutoSum button on the ribbon.
- The SUM function appears in the cell and a moving dotted line appears around the cell range that Excel thinks you want to sum.
- Press Enter and it will automatically add up all of the numbers within the wavy line.
- If you do not want to sum all of the numbers within the moving dotted line, click on the first cell to add and drag the cursor to the final cell and press the Enter key.

The cell range is totalled in the cell. If you change a value in the cell range, the formula will update automatically to show the new sum.
Clicking on the drop down menu under AutoSum gives you other options such as average, maximum and minimum.

- Click on the relevant option
- Click on the first cell that you want to include in your calculation and drag the cursor to the final cell and press Enter.

Remember: if your formula is incorrect your answers will also be incorrect. Be sure to check carefully that your formulas are correct as you go along!

**Using the Formula tab to insert todays date**

- Click on the cell where you want the date to appear
- Click on the Formula tab in the Ribbon
- Click on Time and Date option
- From the drop down menu click on Today and click Ok
Creating charts and graphs

Graphs and charts are very easy to create in Excel. There are many types of charts to choose from all of which can be easily formatted.

To create a chart

- Select the cells in your spreadsheet which you wish to include on the chart. If you want to include non-adjacent cells, hold down the <Ctrl> key while selecting the cells.
- Click the Insert tab on the ribbon.
- Different types of charts are shown in the Charts Group. You can choose a specific type of chart or Recommended Charts.
- To see all of the charts, click on the diagonal arrow in the Charts box.
- Click on the type of chart you want.
- This will create a chart incorporating the data that you selected from your spreadsheet.
- Once you have created your chart, a new tab called Chart Tools will appear in the ribbon.
- Chart Tools include two new tabs – Design and Format – that you can use to help you modify and format the chart.
- Design allows you to change the colours of the chart
- Format controls the style and colour of the lettering and the borders
- Add Chart Element allows you to add a title, gridlines and a key for example.

This is an example of how a completed worksheet and a chart using that data might look. It is also possible to change the size of the chart or put it on a separate page from the data.