

Staff Development Workshop

"MS Excel for Exam Results and Class Records"

Indicative content:

- Brief introduction to spreadsheets
- Creating a spreadsheet to record continuous assessment marks
- Calculating class averages, minimum, maximum, number who passed etc
- Calculating the overall mark (such as combining continuous assessment and final exam), including weighted averages, "best 3 out of 4" and *[more complicated options - optional]*
- Using conditional formatting to highlight poor results
- Tips for preparing marks in spreadsheet before entering in BANNER *[optional, in Q&A afterwards]*
- Tips if recording class attendance
- Emailing students their results using MailMerge *[optional, in Q&A afterwards]*

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Online support available from: <http://elearn.itcarlow.ie/>

Files and Microsoft screencasts from staff common drive: *H:\eLearn\Excel*

Consult extensive help menu within Excel for more assistance, including sections on the various built-in functions, on relative and absolute cell references, on Add, change, or clear conditional formats and on Use mail merge to send personalized e-mail messages to your e-mail address list

The maths bit ... weighted averages

If your module has a 40:60 split with 40% for continuous assessment and 60% for the final exam, then to calculate a student's overall mark we use a weighted average. Take an example, Mary with 55% on continuous assessment and 70% on the final exam. Her overall mark is calculated as follows:

$$55 \times 0.40 + 70 \times 0.60 = 22 + 42 = 64$$

Thus Mary's overall mark, her weighted average, is 64%.

In general, the weighted average mark is calculated by multiplying the mark obtained for each relevant result by the percentage weighting of the particular assessment component, adding up the products. Note that the weights will always add to 1 (or 100%).

Another maths bit ... what do I need to get to pass?

Mary has 55% for continuous assessment, with the module breakdown 40:60 as above. What does she need to get to pass? Well if she has 55 marks on CA worth 40%, that is $55 \times 0.40 = 22$ out of 40. To pass, she needs to get 40 out of 100, so she needs $40 - 22 = 18$ more out of the remaining 60 marks of the final exam. 18 out of 60 is 30% ($\frac{18}{60} \times 100$).

Instructions for the *Student Data Exercise* spreadsheet

Attendance Worksheet – to do:

- Highlight cells B5 to M24 and sort by surname (column C) and then by firstname (column B).
- In cells D25 to M25, use the SUM function to work out the total number of students who attended each class.
- In cells P5 to P24, use the AVERAGE function to work out the average attendance for each student. Format this as a percentage, no decimal places.
- Apply conditional formatting on cells P5 to P24, using an appropriate Colour Scale.
- Apply conditional formatting on cells D25 to M25, using the Highlight Cell Rules, to show classes with full attendance of 20 students and another to show classes with poor attendance (say, 10 students or less).

Final results Worksheet – to do:

- In cells F5 to F24, create an appropriate formula to calculate the final mark (i.e. using absolute and relative cell references, in F5 implement $= 21*30\% + 64*70\%$ and fill down).
- In cells D26 to D30, use built-in functions AVERAGE, MEDIAN, STDEV, MIN and MAX to calculate various statistics, and copy across to columns E and F.
- In cells D32 to D34, use COUNTIF to count the number of passes, fails and absences (you may assume that a mark of 0 indicates an absence).
- Apply conditional formatting on cells F5 to F24, using the Highlight Cell Rules to show students who have failed.

CA equal weights Worksheet – to do:

- In cells I6 to I25, use the built-in function AVERAGE to calculate the average CA mark for each student.
- In cells J6 to J25, use the built-in functions SUM and MIN to calculate the 'best 3 out of 4' CA mark.

CA equal weights2 Worksheet – to do:

- In cells O6 to O25, use the built-in function AVERAGE to calculate the average CA mark for each student.
- In cells P6 to P25, use the built-in functions SUM and SMALL to calculate the 'best 8 out of 10' CA mark.

CA diff weights Worksheet – to do:

- In cells I6 to I25, create an appropriate formula to calculate the final mark (i.e. using absolute and relative cell references, in I6 implement $= (21*5\% + 45*15\% + 50*8\% + 46*12\%)/SUM(weights)$ and fill down).
- Open the spreadsheet Template for Implementing 75% rule and follow the instructions to work out the 'best 3 out of 4' with different weights.
Copy results into cells K6 to K25

Need to pass Worksheet – to do:

- In cells I6 to I25, create an appropriate formula to calculate the CA mark out of 30 (i.e. using cell references as appropriate, in I6 implement $= 39*30\%$ and fill down).
- In cells J6 to J25, create an appropriate formula to calculate the mark the student needs to get in the final exam to pass (i.e. using cell references as appropriate, in I6 implement $= (40-[mark\ Ex.30])/70\%$ and fill down)