Recording Grades in a Spreadsheet

Creating the Spreadsheet

Set up the spreadsheet with student information from MyUW. The result should look something like the example in http://students.washington.edu/davidgg/grades1.xls.

- Download your class list(s). (Repeat this step for each of your sections.) In the Teaching tab on MyUW, click the myUWClass button under “Manage Class Resources” for your class or section. Under “Online Course Resources”, click “Tab-delimited text file via email”.
- Import each of these text files into your spreadsheet program, importing just the columns you find important. I like to keep SectID, StudentNo, Name and Email. Copy and paste as necessary to get all the information into a single spreadsheet.
- Add any empty columns or rows for readability. I like to have a blank row just below the column headings.
- Add rows at the bottom for aggregate information. Add a row for “Perfect Score”. I like to include a row for the average and median scores for each of my sections and for my students as a whole.
- Freeze panes. You will end up with more rows and more columns than can fit in a single screen. It is nice to be able to scroll down without the column headings scrolling off the top, and to scroll to the right without the students’ names scrolling off the left. Place the cursor in the top left cell that you want to be able to scroll. In the window menu, select “freeze panes”.

Entering Raw Grades

For every assignment, homework, quiz, exam, or other opportunity for earning points, add a new column and enter the appropriate data. The result should look something like the example in http://students.washington.edu/davidgg/grades2.xls.

- In the “Perfect Score” row, enter the total possible score for that assignment.
- Suppose the first student is in row 3, and the last student is in row 27. To calculate the average score for the assignment in column J, the formula would be =AVERAGE(J3:J27).
- Similarly, the formula for the median score for this assignment would be =MEDIAN(J3:J27).
- The functions AVERAGE and MEDIAN do not treat blank cells as 0 – they ignore them. If a student does not turn in an assignment, rather than entering a 0, I leave the cell blank. Thus, I get a better picture of how well the students who turned in the assignment did.
Calculating a Final Percentage.

The grade for your class will be made up of different components, say Participation 10%, Quizzes 15%, Homework 20%, Midterm 25%, Final 30%, or whatever. The overall structure of your spreadsheet is to have a single column for each of these components. In a final column, combine them into an aggregate score. The result should look something like the example in http://students.washington.edu/davidgg/grades3.xls.

- Suppose the scores for participation, quizzes, homework, midterm and final, stored as numbers between 0 and 1, are in columns P, Q, H, M and F, respectively. The formula for the final percentage for the student in row 3, given the score breakdown listed above, would be =((P3 * .1) + (Q3 * .15) + (H3 * .2) + (M3 * .25) + (F3 * .3)). As this formula is copied down to other rows, the 3 which represents row 3 will change to be the appropriate row.

- Some grade components may naturally fit into a range from 0 to 1. For instance, you may just assign a participation grade directly to each student as a number between 0 and 1. In such a case, you can just use that column directly in the formula for the final percentage.

Scaling Components

Some grade components are based on a single score, but it is not a number between 0 and 1. For instance, a midterm may consist of 30 points and a final may consist of 60 points. In such a case, the student’s score must be divided by the total possible points.

- You can use the total score directly in the formula, so that it looks something like this: =((P3 * .1) + (Q3 * .15) + (H3 * .2) + (M3/30) * .25) + (F3/60) * .3)

- I prefer to refer to the number in the “Perfect Score” row, rather than enter the number again into the formula. So if the “Perfect Score” row is row 29, the formula would look like this: =((P3 * .1) + (Q3 * .15) + (H3 * .2) + (M3/M$29) * .25) + (F3/F$29) * .3)

- Note the ‘$’ in this formula, appearing before the references to row 29. This ensures that this number will not change to 30 when the formula is copied down to row 4.
Using Averaged Components

Some grade components are based on a set of scores rather than a single score. For instance, there may be a number of homework assignments that together make up 20% of the grade. In such a case, create a new column for the average score.

- Suppose the scores for three homework assignments are stored in columns K, L, and M, and that the “Perfect Score” row is row 29. Put the following formula in a new column for the student in row 3: =((K3/K$29) + (L3/L$29) + (M3/M$29)) / 3
- Note that I did NOT use the AVERAGE function to compute this average. The AVERAGE function ignores blank cells, but here we want them treated as 0. If you leave the cell blank for assignments that were not turned in, as I recommended above, the AVERAGE function will give the wrong results.
- Note that the raw score for each individual assignment needs to be divided by the total number of points possible for that assignment.

Calculating the 4.0-Scale Grade.

The final percentage score must be translated into a grade on the 4.0 scale.

- Typically, there are three separate formulas for computing the 4.0 grade depending on the final percentage: If the percentage is (at or) below a certain point, the student gets 0.0; if the percentage is (at or) above a certain point, the student gets 4.0; if the percentage is between those two points, the grade is somewhere between 0.7 and 4.0.
- To determine how far into the “gray zone” a percentage score is, subtract the low threshold from it, and divide by the difference between the high threshold and the low threshold.
- To convert this into a 4.0-scale grade, multiply it by 3.3 (which is the difference between 4.0 and 0.7), and add .7.
- So suppose the final percentage is stored in column Z, that a score lower than 60% gets a 0.0, a score of 95% or higher gets a 4.0, and that anything else gets a grade somewhere in between. The formula would look like this, for the student in row 3:
  =IF(Z3 < .6, 0, IF(Z3 >= .95, 4, ((Z3 - .6)/.35) * 3.3 + .7)
**Keeping a Running Grade.**

On occasion, a student will ask how she is doing in the class so far. You can answer this question easily if you keep track of a running grade.

- The formula is quite similar to the formula for the final percentage, but it only includes the components that have been turned in so far. The only difference is that you divide the result by the percent of the final grade represented by the components that have been turned in.
- Suppose that three quizzes and three homeworks have been turned in, and the midterm has been done. The final has not been completed, and you haven’t yet assigned a participation score. If the average homework score, worth 20% of the grade, is in column H, the average quiz score, worth 15% of the grade, is in column Q, and the midterm score, worth 25% of the grade, is in column M (and the “Perfect Score” row is row 29), then the formula for the running score for the student in row 3 is
\[ \frac{((H3 \times .2) + (Q3 \times .15) + ((M3/M$29) \times .25))}{.6} \]

**Dropping the Lowest Grade.**

Sometimes, the grade is not based on all the members of a particular set of assignments. For instance you might drop the lowest quiz score or homework score. In this case, you must calculate the average differently. Suppose you have three homeworks graded so far, and you are dropping the lowest grade. Instead of just summing up all three scores and dividing by 3, sum up the three scores, subtract the lowest score, then divide by 2. The formula looks like this:
\[ \frac{((K3/K$29) + (L3/L$29) + (M3/M$29) - \text{MIN}(K3/K$29, L3/L$29, M3/M$29))}{2} \]