

I change the weighting of each person's grade in a favorable way to emphasize areas in which they have done well. This page is attempt to explain my current system.

Suppose the nominal weighting is: homework 35%, midterms 15% each, final exam 20%, class participation 5%, and a presentation 10%. Let us put these weights into a vector $n = (0.35, 0.15, 0.15, 0.2, 0.05, 0.1)$. Note that n has a 1-norm of 1, $|n|_1 = 1$ - i.e. the sum of its components is 1.

Now suppose that the class average in each of the categories, as a percentage of the total possible points, is $c = (85, 82, 89, 85, 79, 85)$. For example, the average homework score was 85% of the total possible points. A hypothetical student named Heironymous has averages $H = (92, 22, 17, 68, 38, 15)$. (Heironymous did well on the homework, OK on the final, and rather badly in the other categories). We now compute an adjusted weighting

$$w = \frac{n}{2} + \frac{1}{2} \frac{n * \frac{H}{c}}{|n * \frac{H}{c}|_1}$$

Here all divisions are component-wise, so H/c means the ratio of Heironymous's scores to the class averages. The $*$ multiplication is also component-wise. Now Heironymous's total score will be $w \cdot H$. In this example, $w = (0.39, 0.13, 0.13, 0.19, 0.4, 0.1)$ and Heironymous's total score is 0.65 instead of the 0.55 he would have gotten.

After such calculations, I look at the score distributions and decide where the grade boundaries are. I try not to put grade divisions between students with very close scores.