

What is a grading “curve” and how is it different from grade “normalization”?

Normalizing raw scores of an assessment instrument is not a “curve”. For example, adjusting all exam grades so that the highest raw score of an exam is equal to 100%. **It is not curving the class grades.** It is a linear, equal adjustment of all grades; in the example, it is relative to 100%, and not a “curve”.

A general example of grading on a curve uses three steps:

1. Numeric scores are determined on an equal basis to each student based on the assessment instrument (exam, quiz, etc.). **In curving grades:** *the absolute values are less relevant, provided that the order of the scores corresponds to the relative performance of each student within the course.*
2. These scores are converted to **percentiles** (or some other system of **quantiles**).
3. The percentile values are transformed to grades according to a division of the percentile scale into intervals, where the interval width of each grade indicates the desired relative frequency for that grade.

For example, if there are five grades in a particular university course, A, B, C, D, and F, where A is reserved for the top 20% of students, B for the next 30%, C for the next 30%-40%, and D or F for the remaining 10%-20%, then scores in the percentile interval from 0% to 20% will receive a grade of D or F, scores from 21% to 50% will receive a grade of C, scores from 51% to 80% receive a grade of B, and scores from 81% to 100% will achieve a grade of A.

Consistent with the example illustrated above, a grading curve allows academic institutions to ensure the distribution of students across certain **grade point average** (GPA) thresholds. As many professors establish the curve to target a course average of a C, the corresponding grade point average equivalent would be a 2.0 on a standard 4.0 scale employed at most North American universities. Similarly, a grade point average of 3.0 on a 4.0 scale would indicate that the student is within the top 20% of the class. Grading curves serve to attach additional significance to these figures, and the specific distribution employed may vary between academic institutions.

NOTE:

At UC Davis, Lower Division general chemistry grades are fitted to a curve to insure that the average class GPA is less than 3.0; and where -2 standard deviation units automatically = D & F grades.

*The American Chemical Society's (ACS) standard proficiency tests use a percentile curve to report test results. (Although UC Berkeley applies **a straight 75% raw percentage** of the standard **Organic Chemistry** test results as the threshold for acceptance of DVC's students' Chem 226/227 course completion being transferable to the College of Chemistry. In this case, it is unfortunate for the transfer students that the curved 75% percentile is not used since the raw % that is equal to the 75% percentile distribution is actually lower than 75%.)*

Also, the curve has hurt UC Davis students in a number of chemistry courses, where higher raw score percentages were fitted into lower percentile distributions, i.e. a higher raw score than the actual letter grade, eg. a 80% raw score curved to a 75% percentile distribution, which resulted in a B raw score, curved to a C grade.

Your Chem 108 grades are NOT curved. They are normalized.