

Engineering Cultures Guidelines for Grading Exams

Below are guidelines based on my experience in this class. We have students who are acutely sensitive to details and fairness. We must demonstrate at least an equal amount of sensitivity to gain their confidence. Most are unfamiliar with thinking about essay questions as something other than expressions of opinion. We must convince them of their responsibility to articulate good arguments in well-structured sentences and paragraphs, each of which containing nuggets of insight. Before grading, please review those general categories at the class website.

My own main strategy in grading is to formulate while reading a sense of whether the answer in question is an A, B, C, D, F, or something in between, such as A- or B+. I then assign numerical grades accordingly. One goal is for the final distinctions among grades to be close to a 90-100, 80-90, etc. scale. It is better that the desired distinctions be slightly lower than higher, e.g. A = 89-100, B = 79-88, etc. I will never allow the grading scale to be higher, A = 91-100, B = 81-90, etc.

In general,

A = Complete answer that covers everything in clear terms while also providing extra insight. Also perfect mechanics.

B = Complete answer with excellent mechanics. Covers everything. Nothing special.

C = Lacking somewhere but still solid. Missing a significant piece. Poor mechanics. Not a clear argument. Small misunderstanding, or maybe a good answer to the wrong question.

D = Making an effort. Clearly has read something or engaged the class somewhere but is way off here.

F = Give some points if any effort is made at all, even something completely off-base. Reserve the "0" for blank answers.

Examples of grade distributions for different point scores. Note that they don't match exactly. Rather we match as closely as we can, making sure we have at least ½ point differences between grades.

Grade	Norm	3pts	5pts	6pts	8pts
A	90	3	4.5, 5	5.5, 6	7, 7.5
B	80	2.5	4	5	6, 6.5
C	70	2	3.5	4, 4.5	5, 5.5
D	60	1.5	3	3, 3.5	4.5
F	55	1	2.5	2.5	4
	↓	0	1	2	3
			0	1	2
				0	1
					0

Not all questions are good ones. Some are too difficult and some are too easy. When questions are too difficult, we make it up to them on the final test grade. When questions are too easy, we have to give the higher grades on the questions and hope other questions offset the unreasonably high grades.

In a 6 pt questions, for example,

A = 90% = 5.4. Define 5.5 and 6 as A answers. Generally there are relatively few of these, especially 6's.

B = 80% = 4.8. Define 5 as the only B answer. There may be lots of these, but on any given question I would expect fewer than one-half.

C = 70% = 4.2. Define 4 and 4.5 as C answers. I would expect a huge number of these on any given question. On a 6 pt question, student probably do not resent receiving only 4 pts, and this gives us room to establish a curve if necessary.

D = 60% = 3.6 Define 3 and 3.5 as D answers. The total number is probably somewhere between the number of B's and A's.

F = 55% and below. Define 2.5, 2, 1.5, 1, and 0.5 as F answers. You may use all of these, depending upon what is appropriate.

When I total up the grades on each exam, my experience in this class has been that the greatest number of grades were in the B range, i.e., B+, B, or B-. The second largest category tends to be the range of C grades, with the range of A grades following behind. The D grades are always fewer but large enough it makes me sad and uncomfortable. Finally, in a large class there are always a handful of F grades.

It is important we grade the way we see fit, without attempting to fit students to a predefined scale. At the same time, based on past experience with students in this class, if I were grading a pool of 160 exams myself I would likely come up with something approaching the following: A = 10-15% or 15-20; B = 50-60%, or 80-100, C = 20-25%, or 30-40, D = 5-20%, or 10-20, and F = 5%, or 5-10.