

STAT 113, FALL 2021: GRADING SYSTEM

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A MASTERY-BASED GRADING SYSTEM

Grading in this course will employ a system which is a variant of “Standards-Based Grading” or “Specifications Grading”.

For a given grade, rather than accumulating “points”, you will need to demonstrate a **specified level of depth and breadth of mastery across a range of specific learning objectives (SLOs)**.

The goals of this approach are:

- to make it easier to see what the **“key concepts and proficiencies”** are, so you know what to focus on and what is less central
- to provide **feedback about your progress in terms of concepts and skills** rather than abstract points
- to encourage **targeted reassessments** of concepts and skills that you may need more practice with
- to limit the influence any one day can have by **removing “choke points”**
- to incentivize **active engagement with mistakes** so you can learn from them, rather than focusing on content you already know well
- to help me **keep track of who needs work in what areas, and what topics are most difficult** for the class as a whole

Downsides are that

- the system is unfamiliar
- there is no coherent notion of a “current average” in the course: by design, as you complete additional assignments, there is expected to be an **upward trend** in the running average, as higher scores replace lower ones. This emphasizes **progress toward mastery** by the end

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I will provide you with periodic “grade reports” with summaries of your progress on each SLO so far, as well as a “bottom line” that indicates what your grade would be if the semester ended then. However, **take this bottom line with several grains of salt**: it is not really a reliable projection of a future grade, due to the way dropping lowest scores works. The reports will be structured in such a way that you can input potential future grades and see how the result changes.

SUMMARY OF GRADING SYSTEM

- **Each graded item** (e.g., homework, quiz, lab or exam question) **is associated with one or more SLO** (Specific Learning Objective). There are 25 SLOs in total for the course.
- For each SLO for each graded item, a grade between 0 and 8 will be assigned, based on the level of mastery of the concept/proficiency represented by the SLO (see the rubric on the following page)
- The SLOs are grouped into five “themes” each of which has 5 SLOs associated with it.
- **A mastery score is tracked for each SLO**, which is **the average from the top 2 items** associated with that objective, at least **one of which must be from an “individual” assignment** (i.e., a quiz, exam, or reassessment).
- **The final SLO grade** (75% of the overall course grade) is simply **the average of the 25 individual SLO grades**. In other words, each SLO constitutes 3% of the final grade.
- 10% of the final grade is based on the term project
- The remaining 15% of the course grade is based on completion of **self-check homework (5%)**, **regular homework (5%)**, and **responding to discussion prompts (5%)**. The overall semester grade for this completion component will be calculated as the proportion of content completed on time and in good faith, and then converted to a 0-8 scale. Up to three items across all three categories combined can be missed before the completion grade is affected.

LEVELS OF MASTERY

Levels of mastery per item per SLO are on an 8 point scale:

8	demonstrated comprehensive mastery of the concept or skill, including subtle nuances and peripheral details
7	demonstrated of mastery of both the big picture and most of the details, with only minor errors either in inessential details or in the finest nuances of the concept. Basically, “A” level work.
6	demonstrated mastery of the essential components but with some details missing or out of place. Solid “B” level work — not necessarily something that requires dedicated revisiting unless you’re planning to go on in statistics
5	solid progress toward mastery, but needs some further attention to firm up the ideas (“C” level work)
4	elements of mastery are present in the response, but don’t yet form a coherent whole (“D” level work)
2	some evidence of a superficial grasp of some ideas . Not yet “passing level” work, but better than nothing
0	no response given, or the response shows no real evidence of engagement with the ideas in question

REASSESSMENT POLICY

You may request extra assessments (“reassessments”) for some extra practice and chances to show mastery of a given SLO after receiving feedback from a quiz or exam on which that SLO was assessed, **provided you are up to date with turning in assigned work**.

At the end of the semester only **the top two graded items for each SLO will be counted**, at least one of which must be from an individual assignment such as a quiz or exam, where reassessments can replace the original quiz or exam item if the grade is higher.

For SLOs that a large portion of the class needs extra chances to master, those chances will be built in to future assignments. I will give the class a sense of which SLOs fit this description when assignments are returned.

Reassessments for an SLO must be requested within a week of receiving feedback on the quiz or exam item to be replaced, and completed within two weeks.

FINAL GRADE DETERMINATION

The final grade is a weighted average of the SLO grade, the project grade, and the completion grade, on a 0-8 point scale. Roughly, the 0-8 point scale corresponds to letter grades at the end of the semester as follows:

A	7.20-8.00
A-	6.80-7.19
B+	6.40-6.79
B	6.00-6.39
B-	5.60-5.99
C+	5.20-5.59
C	4.80-5.19
C-	4.40-4.79
D	4.00-4.59

EXAMPLE

In reality there are 25 SLOs in the course, but for the sake of illustration, suppose there were only 5; call them Z1, Z2, Z3, Z4 and Z5.

Suppose the student Beau Sample has the following grades:

Homework 1:	Quiz 1:	Exam:
• Z1: 7	• Z1: 8	• Z1: 8
• Z2: 5	• Z2: 4	• Z2: 8
• Z3: 7	• Z3: 6	• Z3: 6
Homework 2:	Quiz 2:	• Z4: 5
• Z3: 8	• Z3: 5	• Z5: 5
• Z4: 6	• Z4: 4	Reassessment:
• Z5: 6	• Z5: 4	• Z5: 7

SLO Z1 has three graded items associated with it, with scores of 7, 8 and 8. The top two are both 8s, and at least one (in this case both) of those scores is from a quiz or exam. So Beau's grade for Z1 is 8.0.

SLO Z2 has a 5 from homework 1, a 4 from Quiz 1, and an 8 from the Exam. Since the 8 is from the exam, the remaining grade can be the one from homework, so their grade for Z2 is the average of 8 and 5, or 6.5.

Z3 has five marks: 7 and 8 from homeworks, 6 and 5 from quizzes, and 6 from the exam. The two highest marks here are both from homework, but since at least one quiz/exam/reassessment must be included, the items that are counted become 6 (from either the exam or quiz), and the 8 from homework, for an average of 7.0.

Z4 has an average of 5.5 (from a 6 and a 5). Z5 has a 6, a 4, and a 5 from regular assignments, and a 7 on a reassessment. Reassessments count as individual grades, so the 7 counts, allowing the 6 from homework to count as well, for an end average of 6.5.

So Beau's SLO grades are 8.0, 6.5, 7.0, 5.5 and 6.5, for a total of 33.5, and an average of 6.7.

If Beau has 7 out of 8 on the completion-based assignments, then their final course grade is $0.7 \times 6.7 + 0.3 \times 7 = 6.79$, which is just shy of an $A-$. Since Beau is on the border between $B+$ and $A-$, the direction of rounding would depend on their attendance and participation.