



Understanding Grading – Weighted vs Equal Weight & Extra Credits

TABLE OF CONTENTS

I. Equal Weight Grades	2
A. Calculation of Final Grade	2
B. Calculation of Percent per Assignment.....	2
II. Weighted Grades	3
A. Calculation of Final Grade	3
B. Variety of Assignment Points	3
III. Summarize Equal Weight Grades & Weighted Grades	4
IV. Extra Credit with Equal Weight Grades	4
A. Adding Extra Credit Percentage to Overall Percentage	4
B. Adding Extra Credit Points to Overall Points	5
V. Thinking about and Planning for Extra Credit w/Equal Weight Grades	5
VI. Extra Credit with Weighted Grades	5
A. Taking Extra Credit Percentage and Apply to Overall Grade	5
B. Calculating Extra Credit Percentage.....	6
VII. Thinking about and Planning for Extra Credit w/Weighted Grades	6

The Homeschool-life website Grading Tool provides 2 methods for calculating grades:

- Weighted Grades with or without Extra Credit, or
- Equal Weight Grades with or without Extra Credit

Understanding how both of these methods work can help instructors decide which one is best for their class. We will review weighted vs equal weight and then discuss how extra credit can be added.

I. Equal Weight Grades

- A. When grades have equal weighting, every point earned is of equal value to every other point earned. Calculating the overall average for grade reports is as simple as dividing the points EARNED by the TOTAL POINTS POSSIBLE. Remember to convert % to a decimal number in calculations as follows: % to decimal = % divided by 100. Decimal to % = decimal times 100. So, 3% = 3/100 = .03 and .25 = .25 x 100 = 25%.

Biology Class Assignments:

Assignment	Total Points Possible
Homework 1	5
Lab 1	20
Test 1	100
Homework 2	5
Lab 2	20
Test 2	100
TOTALS	250

Each point earned has the same value or weight as every other point. It does not matter which assignment a point comes from; 1 homework point has the same value as 1 test point.

Student grades for Biology:

Assignment	Total Points Possible	Points Earned	Total Overall
Homework 1	5	5	100%
Lab 1	20	18	90%
Test 1	100	90	90%
Homework 2	5	4	80%
Lab 2	20	20	100%
Test 2	100	88	88%
TOTALS	250	225	90%

To calculate the total percentage grade, divide the Points Earned by Total Points Possible then multiply by 100 to get the percent.

225/250 = 0.90 x 100 = 90%

- B. To calculate the percent earned of each assignment, just divide the points earned on each assignment by the points possible for that assignment. For Homework 1, 5/5 = 100%, Lab 1, 18/20 = 90%, Test 1, 90/100 = 90%, Homework 2, 4/5 = 80%, Lab 2, 20/20 = 100%, and Test 2, 88/100 = 88%. But, you can't just average the percentages. To properly calculate the Overall percent, you take all points earned divided by all points possible then multiply by 100 to get the final, overall percent.

II. Weighted Grades

A. With weighted grading, the instructor is allowed to force certain grade categories or assignments to carry more weight than others. An instructor can determine that the Homework assignments are worth 20%, Labs are worth 30%, and Tests are worth 50% of the total grade. Each point earned is not equal to every other point in this case. Test points are worth a lot more than lab points which are worth more than homework points. To calculate the final grade with weighted grading, you first determine the percent of all points earned in each category then multiply that by the percent of the category. Using our Biology Class example: *(Note, assignments have been placed in Categories and each category has been assigned a percentage value. All category percentages must add up to 100%. The assignments have been sorted by Category).*

Category - Assignment	Total Points Possible	Category %	Points Earned	Percentage by Category
HW - Homework 1	5	HW – 20%	5	$(9/10) \cdot 20 = .18(100) = 18\%$
HW - Homework 2	5		4	
LAB - Lab 1	20	LAB – 30%	18	$(38/40) \cdot 30 = .285(100) = 28.5\%$
LAB - Lab 2	20		20	
Test 1	100	T – 50%	90	$(178/200) \cdot 50 = .445(100) = 44.5\%$
Test 2	100		88	
TOTALS	250	100%	225	$(18\% + 28.5\% + 44.5\%) = 91\%$

B. Because each point within a category is equal to every other point **IN THAT CATEGORY**, your assignments can have different possible points. You don't have to worry that each assignment in each category has the same number of points possible. To illustrate this, in our example above, let's make the Homework 2 assignment worth 8 points. If the student scores 5 points on HW 1 and 7 points on HW 2, the total percent for the HW category would then be:

$$[(5+7)/(5+8)] \cdot 20 = (12/13) \cdot 20 = .1846(100) = 18.46\%. \text{ This would raise your total \% to } 91.46\%.$$

IF, on the other hand, you made Test 2 = 125 points, and the student scored 100 points on Test 2, your test category average would be:

$$[(90 + 100)/(100 + 125)] \cdot 50 = (190/225) \cdot 50 = .4222(100) = 42.22\%. \text{ So, the final total \% would be } 88.72\%.$$

III. To Summarize:

Equal Weight Grades are easier to calculate. The points earned on any assignment have equal weight with the points earned on any other assignment.

Weighted Grades are a little more involved to calculate but they allow the instructor some flexibility in making certain assignments or categories of assignments “count” more.

Let’s move on to extra credit and how it calculates in both weighted and equal weight systems.

IV. Extra Credit with Equal Weight Grades

- A. The Homeschool-life Grading Tool calculates EXTRA CREDIT points as a percentage and adds that to the total percentage of all other grades. Extra Credit points are only added to the overall grade percentage. Even if a student fails to earn any extra credit points, their final score will be the assignments percentage + 0 which equals the assignments percentage.

Note: you need an EXTRA CREDIT Category before you can add extra credit assignments to your gradebook. Your Admin can add this grading category if needed.

Student grades for Biology: Equal Weight Grades with Extra Credit

Assignment	Total Points Possible	Points Earned	Percent Grade Average
Homework 1	5	5	Before EC is added $225/250 = 0.90(100) = 90\%$
Lab 1	20	18	
Test 1	100	90	
Homework 2	5	4	
Lab 2	20	20	
Test 2	100	88	
TOTALS	250	225	After EC is added
Extra Credit #1	5	5	(1 st calculate the EC %) $10 \text{ EC pts}/250 \text{ total pts} = 0.04 = 4\%$ Total % + EC % = 90% + 4% = 94%
Extra Credit #2	2	2	
Extra Credit #3	3	3	
Extra Credit TOTALS	10	10	

- B. If you would rather work with points instead of percentages, you can simply add the total EC points earned to the total points earned on all other assignments. To get the final percentage, divide the (Assignment points + EC points) by the total ASSIGNMENT points. You DO NOT count the EC points in the total assignment points possible. EC are always EXTRA points.

In the example above this would be:

$$225 \text{ Assignments Total points} + 10 \text{ Extra Credit points} = 235/250 \text{ Assignments Total possible points} = 0.94 (100) = 94\%$$

Either way, you get the same result of 94%.

V. Thinking about and Planning for Extra Credit w/Equal Weight Grades

Extra Credit factors into the total grade as a percentage. In our example above, the 10 extra credit points the student earned only produced an increase of 4 percentage points. First decide what percentage increase you would like to offer to your students. If you wish to give them the opportunity to bump their final average a whole grade level (B to A for example), you would want to offer up to 10% in extra credit assignments. To determine 10%, calculate the total points possible then find 10% of that. If the total possible points is 250 points, $250 (.1) = 25$. This means you need to offer 25 points in extra credit. If you only wish students to be able to bump their score up a half of a grade level (B to B+ for example), you would need to find 5% of your total points. In our example, $250 (\text{total possible points}) \times 0.05 = 12.5$. In this case you need to offer your students around 12 or 13 extra credits.

VI. Extra Credit with Weighted Grades

- A. With weighted grading, Extra Credit points are assigned a percentage value which is an amount OVER the 100% total of the other assignment categories. The extra credit percentage is added to the total assignments percentage to calculate the final percentage score.

Category - Assignment	Total Points Possible	Points Earned	Category %	Percentage by Category and Total
HW - Homework 1	5	5	HW – 20%	$(9/10) .20 = .18(100) = 18\%$
HW - Homework 2	5	4		
LAB - Lab 1	20	18	LAB – 30%	$(38/40) .30 = .285(100) = 28.5\%$
LAB - Lab 2	20	20		
Test 1	100	90	T – 50%	$(178/200) .50 = .445(100) = 44.5\%$
Test 2	100	88		
TOTALS	250	225	100%	$(18\% + 28.5\% + 44.5\%) = 91\%$
Extra Credit #1	5	5	EC – 10%	(1 st calculate the EC %) $10/10 = 1 (.1) = .1 (100) = 10\%$ then, Assignment % + EC % =
Extra Credit #2	2	2		
Extra Credit #3	3	3		
Extra Credit TOTALS	10	10	10%	$91\% + 10\% = 101\%$

- B. Divide the total EC points earned by the Total EC points possible. Then, multiply that number by the % you have given to the EC category. In our example this would be:

$10/10 = 1 (.1) = .1 (100) = 10\%$ then, $91\% + 10\% = 101\%$ for the Overall final grade.

VII. Thinking about and Planning for Extra Credit w/Weighted Grades

The thing to consider is how many extra credit points do you want to offer your students. With the weighted grade system, 10% assigned to the Extra Credit category will result in scores being increased by the number of points earned. In our example, 10 points were earned and the EC category is worth 10% so the final score was raised 10 percentage points from 91% to 101%.

If we reduced the EC percent in our example to 5%, earning all 10 extra credit points would increase the final score by only 5 percentage points. $(10/10 = 1(0.05) = 0.05(100) = 5$. The above score would change from 101% to 96%. Please note that the student's ASSIGNMENT average has not changed. The number of EXTRA CREDIT points added is less than before but the assignment average remains the same.

On the other hand, setting your EC weight at 5% means that no matter how many EC points are offered and earned, they will only add to 5% points in the final score. If you set your EC category at 5% and offer your students 25 EC credits spread over 5 EC assignments, even if a student scores all 25 EC points, the most that will be added to their final score is 5 percentage points. Setting the EC % to 10% is the most straight forward way to do EC with weighted grading.