

## Grade Point Projection Formula

Many academic programs require students to obtain a certain Grade Point Average (GPA) in order to gain admission. If your current GPA is lower than the minimum GPA for the program, you can use this formula to discover how long it will take you to reach your target GPA. First, a few definitions:

H = Current number of Quality Hours

G = Current cumulative Grade Point Average (GPA)

T = Target Grade Point Average (the one you would like to achieve)

R = GPA required in additional coursework in order to reach your target GPA in x hours

x = number of hours it will take with an average of R to reach the overall Target GPA

Here's the formula: 
$$x = \frac{H(T-G)}{(R-T)}$$

Now, just plug in the required numbers and calculate!

**Example.** Jim has 60 Quality Hours (H = 60). To get into the Teacher Education program, he needs an overall GPA of 2.5 (T = 2.5) but his current GPA is only 2.0 (G = 2.0). He decides to work really hard and earn a 4.0 in all his courses from now on (R = 4.0). Here's how these numbers fit into the formula:

$$x = \frac{60(2.5-2.0)}{4.0-2.5} = \frac{60(0.5)}{1.5} = \frac{30}{1.5} = \mathbf{20}$$

Jim would need to earn **20 hours of 4.0 grades** to bring his GPA up to a 2.5 overall. But suppose Jim's highest semester GPA was 3.0. At that rate, he would need **60 hours of 3.0 grades** to get his overall GPA to 2.5. Here's how it works:

$$x = \frac{60(2.5-2.0)}{3.0-2.5} = \frac{60(0.5)}{0.5} = \frac{30}{0.5} = \mathbf{60}$$

Now for something a bit messier. Jane has earned 95 Quality Hours. She needs a 2.5 to stay in the Teacher Education program, but last semester her overall GPA fell to 2.413. Here's how it looks in the formula:

$$x = \frac{95(2.5-2.413)}{4.0-2.5} = \frac{95(0.087)}{1.5} = \frac{8.265}{1.5} = \mathbf{5.51}$$

Jane will need **6 hours of 4.0** to bring her GPA back up to a 2.5 (since there are no fractional credit hours, any decimal result for x must be rounded up to the next integer).

Now suppose Jane is taking 12 hours this semester and wants to find out what GPA she must earn this semester in order to reach that 2.5. First, we solve the formula for R (the GPA required in the next x hours of coursework).

Here's the new formula: 
$$R = T + \frac{H(T-G)}{x} = 2.5 + \frac{95(2.5-2.413)}{12} = \mathbf{3.189}$$

If this number seems surprisingly high, remember that Jane can only raise her GPA to 2.5 by earning that 2.5 average in the current semester *plus* the increment necessary to raise the previous 95 credits to 2.5.