USING LOGGER PRO

In this course, you may use LoggerPro as a data analysis program. Much of this can also be done in a typical spreadsheet like Microsoft Excel, but not everything. LoggerPro is licensed for you to use on your computer at h

ome. See the instructions on the moodle/shared folder/website to download and install it.

YOU MAKE A GRAPH IN LOGGER PRO AS FOLLOWS:

i. Enter your independent variable data in the first column (the x-data).

ii. Enter your dependent variable data in the second column (the y-data).

iii. Right-click on the X at the top of the data column and choose Column Options -> Data Set X. Enter mass for name, m for Short Name and kg for units. Click Done.

iv. Repeat step 3 for the Y column which should be force.

v. In the graph, place your cursor on a data point and right-click. Select Graph Options. Make sure the Connect Points option is NOT selected. In science, we never connect the points. Make sure Point Protectors IS checked. Give your graph a meaningful title and click Done.

LINE OF BEST FIT

You now have a graph of the data points. We can see it is linear. So we go to the Analyze menu at the top of the window and select Linear Fit.

Read the contents of the data box for the line. The slope value is calculated for you as is the intercept. Look at the other values:

Correlation: This is the correlation coefficient. A value of 1.000 indicates a perfect fit. This means your data was perfectly straight. The less straight your data is, the lower this value gets.

RMSE: This means root mean squared error. A perfect fit has an RMSE of 0. As your data becomes less straight, RMSE goes up.

IF YOUR GRAPH IS CURVED

On the analyze menu, Click on the **curve fit**. Click on various fits and click the "Try Fit" button until you get the best fit. Usually you should have an idea from the course material which fit will be most appropriate.

NOTE: Some values look like this: 2.309E-037 : this is computer notation for 2.309×10^{-37}. This is a very small number compared to the other values you are dealing with. You can assume numbers like this are actually 0.