

Curve Fitting with Excel 2007

Basic Curve Fitting

1. **Data** There must be two columns of data. One column of “ x ” (input, predictor, independent) data, and one column of “ y ” (output, response, dependent) data. The size of both data sets must be the same.
2. **Scatter Plot** First highlight the input x and output y data by holding the left mouse button down. If the x and y data columns are not adjacent then highlight the x data while holding down the control key, lift your finger off the left button after the x data is highlighted and then highlight the y data. Once this is done go to Insert → Scatter and choose the first option which is a simple scatter plot. To label axis click on the scatter plot and then go to Design → Chart Layouts and choose the left most option (or really whichever one you like but this will do). You can now right click on the labels to edit them.
3. **Fitting a Model** First be sure that your chart is highlighted (left click on the chart anywhere if it isn't). Go to Layout → Trendline. Be sure to choose more trendline options. As you click different curves you will see the curve on the scatter plot. You have 6 options and note that when selecting polynomial you need to set the order of the polynomial (2 is quadratic, 3 is cubic). At the bottom of the Format Trendline box choose Display Equation and Display R squared. Note also that you can choose to give the equation a name, choose to have the equation extrapolated forward or backward, and set a fixed intercept value.

Some Options and Details

- **Changing Axis Range** To change the range on a particular axis (say the x-axis) you need to first right click on the axis and select format axis.
- **Forecasting** You can extend the model (trendline) forward or backward beyond the data set: Right click on the trendline and go to format trendline. This brings up the original dialog box that allows you to adjust the forecast value forward or backwards.
- **Setting the decimal places in a model** Once a trendline has been added to a graph you may need to add decimal places to the equation, especially if excel starts using scientific notation (significant digits are often lost when excel does this). Highlight the equation that you want to edit, right click and choose format trendline label. Choose Number and then you will be able to set the decimal places. As a rule it seems safe to go one more decimal place than needed to get rid of the scientific notation. Note also that when you highlight and right click the equation you can change the font size.