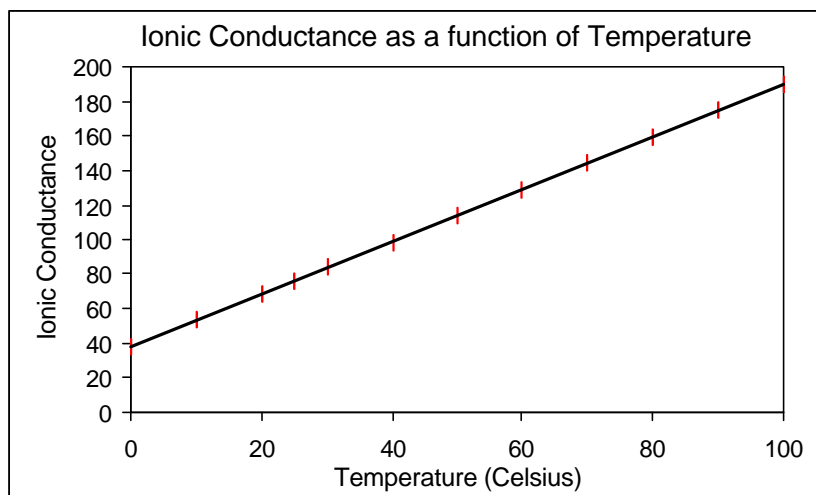


Using Excel for Graphing Data

Whether producing a graph using technology or by hand, it should contain the following:



1. axes with consistent scales and variables (with units) labeled;
2. data points plotted with a symbol;
3. title (written as Y vs X);
4. appropriate line or curve drawn through data;
5. graph should fill the page, especially hand-drawn graphs.

For any graph in Excel, use a XY scatter plot that shows the data points. The scatter plot is the only option where the x-axis is plotted as a scaled variable.

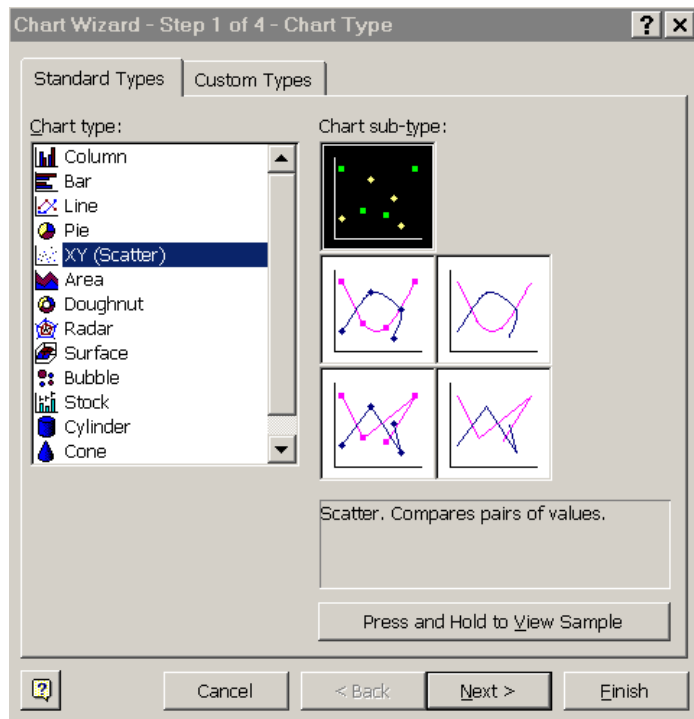


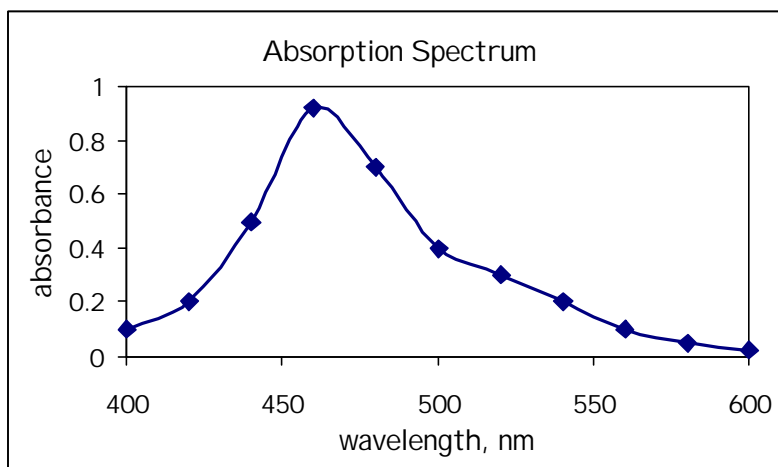
Chart sub-types:

Scatter plot showing only data points

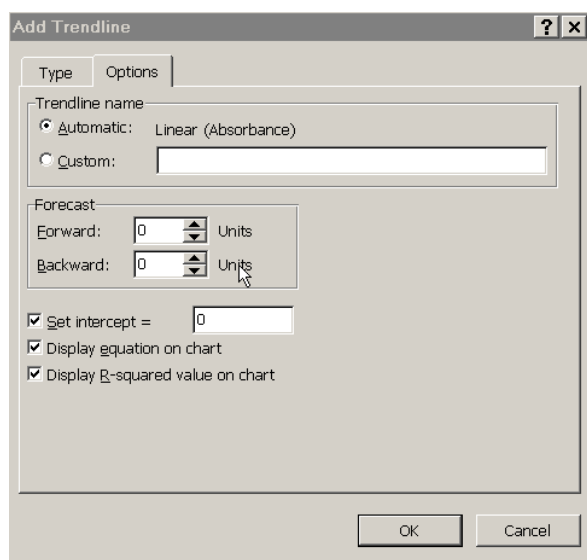
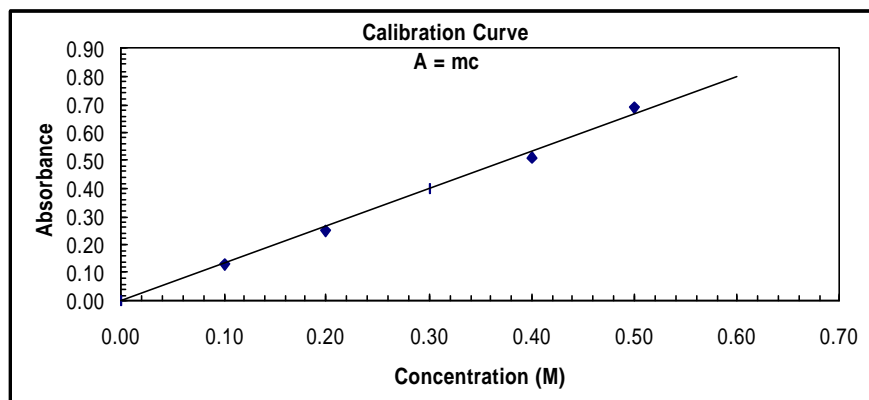
Points connected using smoothing, (which uses a cubic spline)

Points connected using lines (seldom applicable for scientific data)

The scatter plot using smoothing is very useful for absorption spectra.



For calibration curves, the regression should include the origin and the line should go through the origin (0,0).



To add a regression line to a plot:
From the Chart menu, select **Add Trendline**; for Type, select a **linear regression** and then from Options select **Set intercept = 0**, **Display equation on chart**, and **Display R-squared value on chart**.

The Forecast feature will extend (extrapolate) the line pass the data limits.

For complete instructions for using Excel see http://academic.pgcc.edu/psc/Excel_guide.pdf.