Data Tables and Graphs

When you are writing a lab report, there are some formatting styles around quantitative data, tables, and graphs that I will be looking for in all my courses. Consider this the requirements of the journal to which you are submitting your paper.

Quantitative Data and Formulas

- numbers larger than 999 and smaller than 0.001 should be in scientific notation
- format should be along the lines of 3.2×10^4
  - using $3.2 * 10^4$ or 3.2 E4 are NOT acceptable
- for students new to using Word, superscripts can be initiated by using Ctrl and +, and subscripts Ctrl and -.
  - eg Fe_2O_3

Tables

- Tables are numbered in order with a descriptive title; placed at the top of the table
- Appropriate and meaningful column headings
- Independent then dependent variables
- Units are best placed in the heading
- Uncertainties
- Vertical lines
- Data is centered or aligned
- Tables **do not** cross pages unless absolutely necessary and if done, column headings are repeated on the new page.

Example.

Table 1. Exposure to salinity reduces the growth of wheat plants.

Group (n=5 each)	Light/day (h)	Height, cm (mean ± S.D.)	
		5 days exposure	10 days exposure
Control group (0 mM NaCl)	12	70.3±2	90±10.5
50 mM NaCl	12	60.4±1.5*	78±7.9*
Control group (0 mM NaCl)	16	75.7±8.	100±3
50 mM NaCl	16	52.2±2	81±6.7

Graphs

- Descriptive title, from now on starts with Figure 1 placed at the bottom (time vs temperature not good enough)
- Both axis are labeled with units (1 each)
- Major and minor grid lines
- Data plotted appropriately with legend if more than 2 data sets (1 each)
- Vertical error bars to be shown if recorded. If they are too small to be seen, this is noted in the figure description.
- Appropriate scale used
- Trendline given – if appropriate, equation and R^2 are to be shown

Example.

The plotted trendline equation shown on the graph:

$$y = 497.23e^{-0.1x}$$
$$R^2 = 0.9933$$
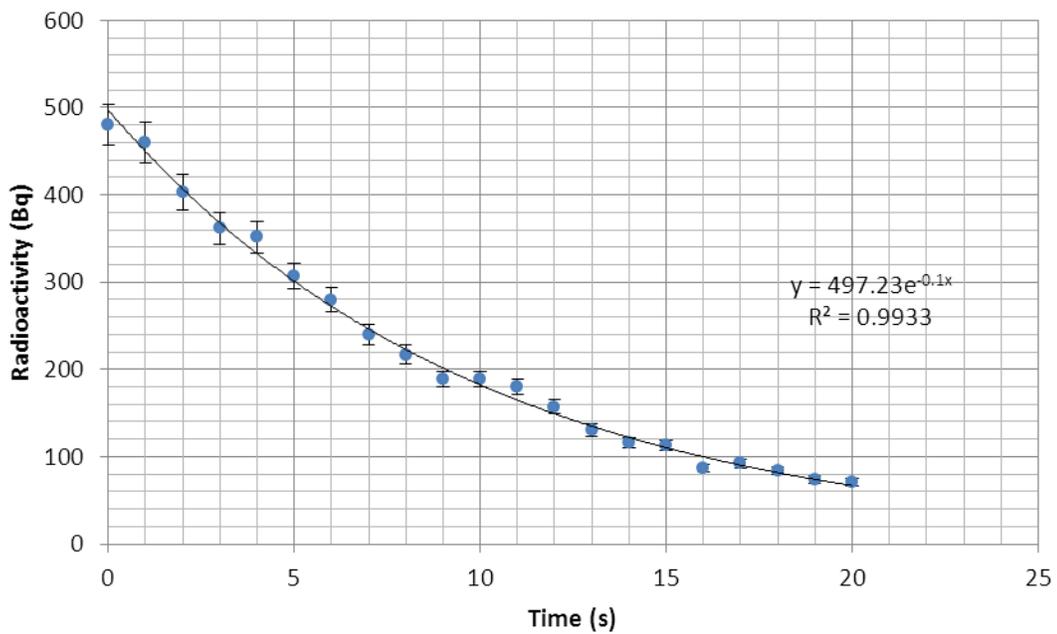
Figure 1. Decay of ^{235}Fictionium