

# Frequently Asked Questions

This document will be updated until **August 30<sup>th</sup>**, after which there will be no further assistance available. If your question has not been answered in this document, try rereading the instructions, viewing the online resources and looking over the rubric. Until then, if you don't see your question answered here, please email Emily at [emily.garvin@queensu.ca](mailto:emily.garvin@queensu.ca).

It is recommended that for formatting requirements, you read the **formatting section** of the assignment, and use the **pdf tutorials & practice assignment answer key** as examples. The videos will help show you how to do things, but these are the most updated resources for the formatting requirements.

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## General Questions

### Finding the Excel Word Assignment & Tutorials

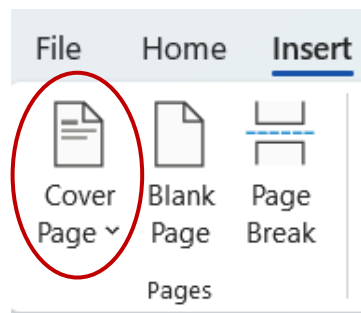
The assignment, the practice assignment and tutorials for Microsoft Excel and Word can be found [HERE](#).

### Submitting the Excel Word Assignment

The instructions for submitting the Excel Word Assignment will be provided a **week before the due date**.

### Adding a Title Page

Go to the Insert tab in Word and click “Cover Page.” Select a simple design from the drop-down menu.



### Determining Significant Figures

Error should be reported to **1 significant figure**. If there is a number that has an error value associated with it, it should be reported to the **same digit** as the error.

Examples:  $678 \pm 16$  should be expressed as  $(6.8 \pm 0.2) \times 10^2$  or  $(68 \pm 2) \times 10^1$  or  $680 \pm 20$   
 $987.54 \pm 0.11$  should be expressed as  $987.5 \pm 0.1$

If there is **not an error value associated** with a given value, and the number of significant figures has not been specified in the question, report all numerical values to **two decimal places**.

### Performing Calculations

When performing calculations, use as many significant figures as the numbers are **presented with**. If you are using the equations or the values from the regression analyses, you must use the numbers as they are presented **with error** because that is the only digits that can be guaranteed.

### Trendline Equations

Trendline equations should always be included **whenever a trendline is included on a plot**. The trendline equations should be presented on the plot with their trendlines and should also have the  $R^2$  value on the plot.

### Downloading Analysis ToolPak for Mac

Go to the **Tools** drop down menu and select Add-Ins. From there, you should see the option to check off both or either of the Analysis ToolPak or Solver.

### Basic Plot Guidelines

Figure 1 below was taken from the practice assignment answer key in order to help you see what a good plot should look like. Some things to note:

- No gridlines, use inside tick marks instead
- Axis titles with units but no chart titles
- Legend is enclosed by the plot, but not overlapping any data
- Plot enclosed by a black box – plot area line and axis are black lines
- Trendline equations and  $R^2$  values present on the graph, with variables & subscripts to show what trendline they are attached to
  - o You may also choose to add a line to the label to show what series they work with
- Descriptive Figure caption

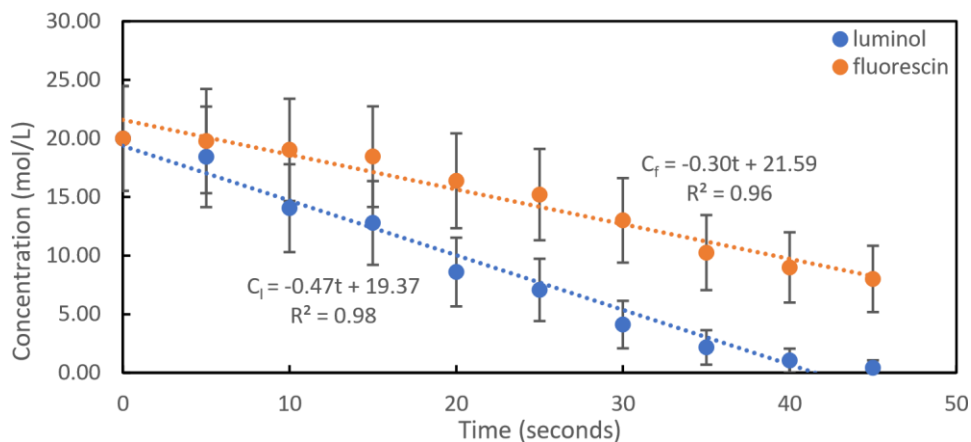


Figure 1: Example plot for formatting purposes

## Formatting Equations

Start by creating an equation by clicking **Equation** in the **Insert** tab. Write your equation.

$$y = mx + b$$

Then you need to add an equation number on the end. If you were adding a number to Equation 1, you would write “#(1)” in the equation editor on the right of your equation and click enter.

$$y = mx + b \quad (1)$$

## Digits for Calculations

You should be using the number of digits dictated by error in your calculations. If the number has no error associated, use all the digits provided by the trendline. If the number has error associated with it, only use the same number of digits that are presented with the error. For example, if a value is given as  $5.274 \pm 0.1$ , then you can only use 5.3 in calculations.

## Error Bars

Error bars should only be in the y-direction. We know the mass exactly, so there should be no error bars in the x-direction. Ensure you set the x-direction to 0 and remove the caps so they can't be seen.

## Ln Uncertainty

To calculate the ln uncertainty, simply take the ln of the previously calculated uncertainty values.

