PHYS1XXX Checklist for Lab Report

Formatting

- Font sizes: All text, including in tables and figure captions and labels should be easily legible on an A4 page. As a rough guide, you should not use a font size smaller than 11 pts.
- Fonts: Try to use the same font throughout the entire document. Use consistent sizes for headings and body text.
- Alignment: Use consistent margins and spacing.
- Headings: use appropriate section and subsection headings where relevant to outline the structure.
- Use dot points and numbered lists where appropriate to make your report more legible (e.g. when listing equipment or listing steps in your method)

Graphs and figures

- Use graphs to present your results. Try to find the most appropriate graph type for your data – generally line (scatter) graphs are more appropriate for time-series data, and bar graphs are appropriate for categorical data.
- Ensure the font sizes in figure labels and axis titles are legible (see above). Take particular care when copying your graphs from Excel to your report and resizing – it may make the text too small to read, and you should enlarge the font in Excel accordingly.
- All axes should have titles, labels, and units. Where multiple series are plotted on the same graph, a legend should be included in the graph describing which is which.
- Trendlines are useful when your data can be fit to a curve. However, ensure that you use the correct type for your data – linear trendlines for linear relationships, exponential trendlines for exponential relationships, and a power law for relationships of the form x^n (including x^2, x^3 etc)
- Linear plots are best for linear data, log-linear plots for exponential data, and log-log plots for power laws – check with your tutor for guidance on choosing the best type for your data.
- Include captions describing graphs and figures.
- Refer to your graphs and figures in the text of your report – don't just include them without mentioning them.

Data Tables

- Data tables are useful for presenting numerical data either as a complement to a graph (to show additional information) or where a graph is not appropriate.
- Include table caption to describe table content.
- Refer to your tables in the text of your report – don't just include it without mentioning them.
- Format all numbers appropriately: refer to the PDF on canvas about significant figures. As a rough guide, if all your numbers have a large number of decimal points, they have not been formatted correctly (unless the uncertainty justifies it!).
- Avoid giant tables of data. If necessary, you can include them in your appendix, but the main body of your report should only include a summary of your most important results. It is not appropriate to include every single measurement taken in the body of your report.

Text

- Separate different messages and topics in different paragraphs. Do not write a whole section as one paragraph (unless it's a very short section like Conclusion).
- Consult external sources that are relevant to your project and make references to them to support your hypotheses, results and conclusions.
- Include relevant equations that describe relationships between variables you are measuring.
- Include the bibliography of references at the end of your report.
- Use your figures and tables when describing results.

Numbers

- All measurements should include uncertainty/SEM and should be formatted to the correct format (1-2 significant figures in uncertainty/SEM and the same number of decimal points in the number and its uncertainty/SEM). Check the PDF on significant figures on canvas for a more detailed discussion.
- Numbers calculated from measurements should also include uncertainty/SEM, propagated from the measured values using the appropriate formulas.
- Explain how calculations were performed in your analysis section – include any formulas you have used.