Formal Report

Length

- No longer than 1500 words (figures, tables and short captions do not count). The report should be based on the data you took in the lab and include all the major results obtained from that data

It's your own

- Write your own report.
- You may discuss with your lab partners and other classmates, but use your own words and make your own diagrams.
- If two reports show enough similarity to appear that major portions have been copied then no credit will be granted for either report.

Word processing tools

- For this purpose free software such as LaTeX or Libre/OpenOffice is acceptable and economical.
- Overleaf.com is an online LaTeX version
- An online equation editor is available at the CodeCogs Online Equation Editor website: http://www.codecogs.com/components/equationeditor/equationeditor.php.

Writing

- Make an Outline:
  - The outline's first level consists of the major divisions of the paper. Leave lots of space between these divisions. Under each division title, list the main things you want to say, point-by-point. On the lower levels, elaborate on these points as necessary to completely explain what you want to say. You may need to rewrite the outline a time or two as more points are added and you rearrange their order for clarity. When everything you want to say is noted in the outline, form the points into sentences and paragraphs.

Title page and abstract

- Put the title, your name, course and date on the top of the title page.
- The abstract should be placed underneath these items.
- The abstract should contain a brief summary of the purpose, methods and results of the experiment.

Introduction

- Say what you did and why
- Establish the goals and rationale.
- What has been done before?
- Put the project in a global context.

Theory

- Present the simple theory necessary to understand the experiments.
- You may treat some or all of the theory as the hypotheses which your experiments are to test.
- Use your own words.
- Assume the reader has some background but refer to elementary texts in case he or she needs to brush up.
- State theory's assumptions and refer to a source for a more complete derivations.

Experiment

- Clearly describe what you did.
- Do not over-use the passive.
- Make clear and simple diagrams showing essential features of the apparatus.

Results

- Show your results in graphical form if possible.
- A complete table of the raw data is usually not necessary.
- If calculated quantities are presented, refer to the relevant equation in the theory section but don't show the detailed steps in the calculation.
- Uncertainties on both the raw data and calculated quantities should be indicated, but don't show detailed error calculations or methods—these should be known by the reader.

Discussion & Conclusions

- Indicate how nearly you achieved the goals mentioned in the introduction.
- Discuss the meaning of the results in terms of the theory presented.
- Do experimental results and theory agree within experimental error?
- If not, suggest why not and propose what further experiments may be needed.
- Make sure that your conclusions follow from your experimental results, **Treat your own data and results objectively and don't try to slant the discussion to agree with your preconceived notions when the data do not support them.**

Acknowledgments

References

- Reference publicly available books and articles
- Websites are ok for some references, but include the date on which accessed
- Do not reference SFU labscripts etc

Equations:

- Very simple equations may be written in-line.
- Complex equations with lots of subscripts, superscripts, compound fractions, integrals or summations look clumsy in-line and should be displayed centred with a blank line above and below.
- Any equation that is referred to elsewhere in the text should be displayed and numbered at the right margin.
- Always define every symbol in all equations.

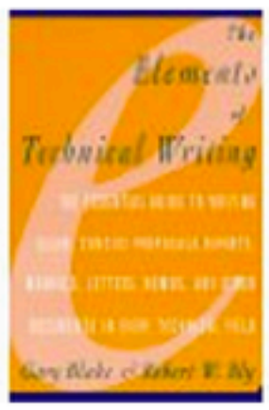
Figures:

- Figures should have a short caption beneath them.
- A caption makes it easier to understand for someone browsing through the pages. If there is more than one figure, the captions should start with a figure number.
- The text of the paper should refer to every figure.

Points on Style

- Strunk and White, *The Elements of Style*
- Bly and Blake, *Technical Writing*

Frequently Bought Together



+

Price for both: $14.86

Add both to Cart

Add both to Wish List

Show availability and shipping details

Use the active voice.

Passive

Control of the furnace is provided by a thermostat.

Active

A thermostat controls the furnace.

Use simple rather than complex language.

Complex

Another very important consequence of Einstein's theory of relativity that does not follow from classical mechanics is the prediction that even when a body having mass is at rest, and hence has no kinetic energy, there still remains a fixed and constant quantity of energy within this body.

Simple

According to the theory of special relativity, even a body at rest contains energy.

Use simple rather than complex language.

Complex

Another very important consequence of Einstein's theory of relativity that does not follow from classical mechanics is the prediction that even when a body having mass is at rest, and hence has no kinetic energy, there still remains a fixed and constant quantity of energy within this body.

Simple

According to the theory of special relativity, even a body at rest contains energy.

Delete words, sentences and phrases that do not add meaning.

Wordy

It is most useful to keep in mind that the term *diabetes mellitus* refers to a whole spectrum of disorders.

Consise

Diabetes mellitus refers to a whole spectrum of disorders

Use specific, concrete terms rather than vague generalities.

Vague

The expedition was delayed for a time because of unfavourable conditions.

Specific

The expedition was delayed one week because of snowstorms.

Tenses

- Use the past tense to describe your experimental work and results.
- In most other writings, use the present tense.
- Hypotheses, principles, theories, facts and other general truths are expressed in the present tense.

Avoid needlessly technical language.

Too Technical

Maximize the decibel level.

Clearer

Turn up the sound.

Keep lists in parallel

Not Parallel

The tube runs into
the chest cavity,
across the lungs
and down
into the stomach.

Parallel

The tube runs into
the chest cavity,
across the lungs
and down into the
stomach.

Dos and Dont's

Do

Do use relatively large font and generous line spacing, e.g., 12 pt Times and 18 pt line spacing.

Don’t

- Don't use very small typeface with cramped line spacing., e.g., 10 pt Times and 11 pt line spacing. (There is no room to write comments.)

Do

Do use your own words to describe the experiment.

Don’t

Don't copy large sections of the lab manual, other book or website.

Do

Do use the affirmative:

"We adjusted the string's length to 1 m."

Don’t

Don't use the imperative:

"Adjust the string's length to 1 m."

You’re writing a report
not instructions.

Do

Do make your own simple but complete line drawings of the apparatus with labels of parts. Identify mathematical variables on the drawings if possible.

Don’t

Don't scan in or photocopy fancy pictures from the lab manual or other books.

"BORROWED" ARTWORK MUST BE GIVEN ATTRIBUTION.

Do

Do prepare neat publication-quality graphs of data which fit in with the text and are easily legible.

Don’t

Don't tear out or photocopy graphs from your lab book and stick them in your formal report.