Work Term Report Technical Writing

MME Department

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Presentation Outline

1. Report Writing - General Advice

2. Technical Writing 101

3. Grammar Issues

4. Proof Reading

5. Plagiarism

6. Referencing

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Report Writing – General Advice

- It's easy to write if you have something to say

- Plan ahead, set up a good work report topic/project
    - Start well ahead of time and organize your thoughts
    - Take notes during the work term – write a little bit every couple of days

Many students wait until the week before the report is due to start writing. The result is usually a poorly written report.

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Report Writing – General Advice

- Put yourself in your successors place
    - Someone will likely be building on your work

- Ask for your predecessor's work
    - You'll likely be building on the work of others

It's OK to be building on the work of others, but reference their work.

Report Writing – General Advice

- Write an Outline
    - Start with a 'big-picture' outline
    - Focus on the report objective
    - Consider your audience (the marker and your boss)

- Generate a more detailed outline through 'successive approximation'
    - Similar process to design
    - Increasing level of detail
        - Add analysis results and figures
        - Make sure all data required for analysis is presented.

Too many will write freeform. The report's flow usually suffers.

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Technical Writing 101

- Technical writing is very different from creative writing

  The best creative writing will give you something new every time you read it. The best technical writing will give you everything the first time you read it.

- The objective is to:
  - Capture Information
  - Communicate Information
  - Persuade

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Technical Writing 101

- Clarity of thought
  - Writing is easy if you know what you want to say – focus on your objective statement
  - Make the message clear at every level – sentence, paragraph, section, etc.

- Clear structure, arguments and presentation
  - Background comes first
  - Increasing complexity follows

- Clear presentation
  - Figures and tables are especially important
  - Good grammar and correct spelling are essential

Technical Writing 101

- Write What you Mean!!!
    - Get the spelling, words, and sentence structure right
    - Avoid redundancies, oxymorons, and ambiguity

A well written document is easy to read

Well presented material is easy to remember

Common Grammatical Issues

- **<u>Do not</u>** use 1st or 2nd person
  - e.g. me, I, you, we, our, etc.

- **<u>Try not to</u>** refer to yourself in 3rd person
  - e.g. "the student then designed…."

- **<u>Do not</u>** use contractions
  - e.g. can't, don't, etc.

- Avoid relative terms. Qualify all statements. **<u>Do not</u>** use conversational language or slang.
  - ✖ "Retrofitting the fixtures will be rough and will cost loads."
  - ✔ "Retrofitting the fixtures will be strenuous and expensive."

Common Grammatical Issues

- Check for run on sentences

  - Generally, if a sentence is longer than two lines, then it needs to be split into two sentences.

- Use multiple paragraphs (not one large block of text)

  - A change in idea or thought requires a new paragraph

  - Generally, if a paragraph is more than 7 to 10 sentences, you need a new paragraph

Common Grammatical Issues

- Use consistent and logical tense (past or present). Sometimes you have to switch.

- Learn how to use Commas properly

- Try to use an active voice

  ✖ "The benefits of replacing the light fixtures is being considered by the owner of the factory."

  ✔ "The owner of the factory is considering the benefits of replacing the light fixtures."

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Proof Reading

Poor grammar and writing will hinder your ability to convey the intended message, and undermine your credibility as an engineer

- Reading your own writing shortly after completion is rarely effective. Your brain tends to miss the errors.
  - Wait a few days before proof reading your own work.

- Rule of Thumb – Once you see about 5 typos in a report, it is likely going to be a re-submit.

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Proof Reading

- Strategies
    - Finish early and put the report aside for at least one week. Then proof read it.
    - If time is a problem, read the report out loud or have Word do it for you.
    - Have a friend read it. Make sure they are reliable, and that they know how to write.
    - Change the font (for proofreading only) to something that is harder to read.

- **Do Not** expect the marker to be your proof reader.

Most Common Writing Mistakes

From your markers – the most common (and easily fixed) work report writing errors.

- Use of 1st person
- Inconsistent tense
- Not proof read

Plagiarism

- Plagiarize – to take and use the thoughts, writings, inventions, and work of others and pass it off as your own [1]

- Self-plagiarism is copying your own work.

- Plagiarism, self-plagiarism, and not crediting the work of others is an academic offense that can result in severe penalties.

- If you use someone else's work or work that you have done before, then you must reference it.

- For more information, review the academic integrity tutorial from the library, and Integrity for Students from the Provost's Office.

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Referencing

- There are three approaches to referencing in a written report.

    - If you paraphrase or present an idea that is not commonly known, then include an in-text reference to the source.

    - For a brief quotation, include the quotation in your text bracketed by quotation marks (" ") and an in-text reference.

    - For a longer quotation, separate the quotation from your text and indent it. Include an in-text reference.

Referencing

- If you paraphrase or present an idea that is not commonly known, then include an in-text reference to the source.

- Example

Engineering students can benefit from studying together in groups. However, according to Landis [2], 90% of new engineering students study by themselves.

Referencing

- For a brief quotation, include the quotation in your text bracketed by quotation marks (" ") and an in-text reference.

- Example

Engineering students can benefit from studying together in groups. Unfortunately, "90% of first year engineering students study alone" [2].

Referencing

- For a longer quotation, separate the quotation from your text and indent it. Include an in-text reference.

- Example

Easily accessible websites have made it possible for engineers to access a large volume of information; however, websites have made copying intellectual property from other people much easier. In [3], the authors state the following:

> *Plagiarism is defined as taking intellectual property, such as words, drawings, photos, artwork, or other creative material that was written or created by others, and passing it off as your own. Plagiarism has become more common in recent years, mainly because of the convenience of cutting and pasting from the Internet. Plagiarism is always unethical and is specifically contrary to several sections in engineering codes of ethics.*

Furthermore, engineers, having graduated from a professional program…

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Referencing

- References such as Wiki (-pedia, -how to, -answers, etc.) are inappropriate since the content can be changed by the general public.

- Websites and the internet are difficult to reference properly, and it can be argued that you shouldn't reference a website as they are dynamic and subject to change.

- A better reference would be a book, journal paper, or technical document that has been peer reviewed and isn't going to disappear.

- The majority of technical documents will have a hard copy that can be sourced and referenced. Often, it will require one or two more clicks to find the proper reference.

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Referencing

- Examples

The following reference for a book is inappropriate:

[1]   https://www.mheducation.ca/understanding-boat-design-9780070076945-can

While the following reference, the same reference as above, is more appropriate:

[2]   T. Brewer, *Understanding Boat Design*, 4th Edition, Crawfordsville, IN, McGraw-Hill Companies, 1994.

The first reference is just a link that may or may not exist. With the second reference the book can be easily found online, in a bookstore, or in a library. Note that the website can be appended to the end of a reference:

[3]   T. Brewer, *Understanding Boat Design*, 4th Edition, Crawfordsville, IN, McGraw-Hill Companies, 1994. Available: https://www.mheducation.ca/understanding-boat-design-9780070076945-can

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References

[1] *The Concise Oxford Dictionary*, 9th Ed., New York, New York, Oxford University Press, 1995.

[2] R.B. Landis, *Studying Engineering: A Road Map to a Rewarding Career*, 4th Ed., Los Angeles, California, Discovery Press, 2013.

[3] G.C. Andrews, J.D. Applevich, R.A. Fraser, C.G. MacGregor, *Introduction to Professional Engineering in Canada*, 5th Ed., North York, Canada, Pearson Canada Inc., 2019, pp. 49-50.

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QUESTIONS?