STYLE GUIDE FOR TECHNICAL REPORT WRITING

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GENERAL

Your goal as an engineer is to write technical reports that are formal, logically organized and easy to read and understand.

Normally the reader does not know anything about your report. You need to explain what you have done step by step in a logical sequence.

Title should capture the essence in a few words.

Abstract should describe the entire work in a few hundred words (usually one paragraph).

Use formal language and prefer the tone used in textbooks. Even the opinions should be stated in a formal, neutral tone.

Make sure sentences are structured correctly and each sentence has a meaning and a message. If a sentence does not read well or is cumbersome, do not hesitate to rewrite it.

Avoid long sentences. Even if they are logically correct, the meaning gets lost when too many phrases and conditions are put together.

Make sure that your report (or anything you write as an engineer) is free of grammatical errors. Even a simple grammatical error will distract the reader, reflect poorly on you, and you will lose credibility in the eyes of the reader.

Do not use phrases such as:
I did this, we did that
Let's talk about this
Like (prefer "such as")

Avoid simplifications in formal writing; for example:
Avoid "don't," use "do not"
Avoid "didn't," use "did not"
Avoid "won't," use "will not," and so on.

Write as if all the work has been completed even if it is not the case yet. Revision of such manuscript will be much simpler than the one which describes everything in future tense and vague.

Also, write as if you are writing a book that will be published and will be available to readers for many years. Hence, avoid referring yourself with team numbers. Never mention a team number since it is used temporarily for internal organizational purposes.

FONT SIZE, TYPE AND LINE SPACING

Again use the font type, size and style consistently throughout the document.

- For text, use Times New Roman size 12, double line spacing throughout the document. Quotations from another reference should be in quotation marks and single-spaced. Figure and table titles should also be single-spaced.
- For figure and table titles, use Times Roman size 10, single spacing.
- Chapter titles, section and subsection titles should use Times New Roman size 12, bold, single-spaced.
- Avoid using different types of font faces and do not change the font size.
- Avoid using combined features (bold, underline and italics).

MARGINS

Use margins of one inch on all sides of the page.

NUMBERS

- Any number below 1 is singular, and any number larger than 1 is plural. Hence, something is 0.5 inch, not 0.5 inches. Something else may measure 1.1 liters (plural), not 1.1 liter (singular).
- Avoid starting a sentence with a number. If you have to, then spell it out.

FIGURES

Figure numbers and figure titles should appear <u>below</u> the figures.

> Example:
> <p align="center">FIGURE GOES HERE</p>
>
> <p align="center">Figure 12. Layout of the designed system (Font size 10)</p>
>
> Use the same style consistently throughout the report. Use the same font, size, capitalization, style in all figure titles. If the text uses font size 12, figure title should use font size 10.
>
> Refer to each figure in the text by saying, for example, this is illustrated in Figure 12. We can also say that Figure 12 shows the designed system, or sometimes we can say something about the system (See Figure 12).
>
> Avoid referencing a figure by indicating its location as "above" or "below" the text - since figures and text float as a document is developed. For instance, do not use "as shown in Figure 10 above, or this is illustrated in Figure below." Simply refer to Figure 10 wherever it may be.

Make sure each axis has a title and a unit in every chart.

Font size in figures should be selected carefully so that each character used in a figure is legible. Also, text should not be too large as it then becomes distractive.

If a figure is borrowed from another source, it must be clearly indicated within the text and in the figure title:

FIGURE GOES HERE

Figure 16. Engineering drawing of the final system [9]

The above example indicates that the figure is borrowed from reference numbered 9.

TABLES

Table number and title should appear <u>above</u> the figure.

Example:

Table 8. Specifications for alternate designs [26] (Use font size 10)

TABLE GOES HERE

Text may refer to the table by mentioning that alternate designs are evaluated in Table 8. Alternately, one may provide a summary of evaluations in Table 8.

Make sure that units are given if numerical data are provided. Include additional notes in the bottom row for clarification, if necessary.

If the contents are borrowed from another source, reference number should be included in the title as shown by [26]. Make sure everything in the table is legible; that is, the font size remains at 10. Too large font size becomes distractive, too small illegible. As the author, you must pay attention to every detail.

Use the same style consistently. Use the same font, size, capitalization, style in all tables.

Consistency means this:
Table 1. This is the title of Table 1
Table 2. This is the title of Table 2
Table 3. This is the title of Table 3

Do NOT use this careless style:
Table 1. This is Table 1
Table 2: *This Is Table 2.*
Table (3) This is TABLE 3, etc.

CONSISTENCY

Be precise and not vague.

Use the guidance provided above so that senior design reports have a common structure as far as formatting and content go.

Apply the selected format consistently throughout the report. This applies to the font type, font size, margins, figure and table titles, and references.

COPY-AND-PASTE = PLAGIARISM

Do NOT copy-and-paste from other sources as it may be considered plagiarism. Online services detect whether plagiarism is involved or not; you need to be very careful not to tarnish your name.

Again, do NOT copy-and-paste others' work which may include tables, figures, equations, text, etc.

Always provide a reference when you refer to the others' work. This applies to text as well as figures and tables - if used. It is strongly recommended that all material used in a formal engineering document including figures and tables be original, and not cut-and-paste from other sources, which lowers the originality of the work.

Show references as follows: This line of work has been addressed by researchers since the 1950s [3]. A detailed survey of the research work in this field is compiled by a number of researchers as reported in [4-6]. As stated by Johnson, derivation uses Newton's first law [8]. Several studies show this result [9-12, 16, 21]. Note that brackets contain the reference number(s) of a paper or book listed at the end of your report 9in a section called "References.")

TURNITIN PLAGIARISM DETECTION

Run your report on TURNITIN (www.turnitin.com) and report its rating.

REFERENCES

It is very important that ALL references use exactly the same format in your reference list. Suggested formats that should be used for journal and proceedings papers, books and electronic resources are listed below. You are discouraged from using URLs in your reference lists as they are not reliable in the long term and can generate error messages when a reader wishes to reach them, which in turn lowers the dependability of your work.

Use the following format consistently for all of your references:

Journal Paper:
1. Name Lastname1, Name Lastname2, and Name Lastname3, "Title of the Work," ASME/IEEE Transactions on Mechatronics, Vol. 5, No. 2, pp. 50-56, 2009.

Paper in Conference Proceedings:
2.   Name Lastname1, Name Lastname2, and Name Lastname3, "Title of the Work," Proceedings of the ASME Conference on Design, Vol. 1, pp. 50-56, Miami, Florida, May 3-5, 2009.

Book:
3.   Name Lastname1, and Name lastname2, Title of the Book, Publishing Company, City, State, Year.

Web Sources:
4.   Name Lastname1, and Name Lastname2, "Title of Web Page," *Publishing Organization or Name of Website in Italics*, publication date if available, access date, URL.

Electronic Books:
5.   Name Lastname1, and Name lastname2, Title of the Book, Publishing Company, City, State, Year, URL.

If possible, avoid using internet links as references as they are very unreliable and may disappear anytime. Any unreachable reference lowers the quality of your report.

Note that Turnitin score gets worse as it detects more and more links in a report.

Prefer textbooks (if applicable), journals (or transactions) especially by well-known professional organizations such as ASME and IEEE, conference proceedings by ASME and IEEE.

Occasionally master theses and Ph.D. dissertations can also be used as reference. As they are more likely to be available online, they may be downloaded, reviewed, utilized and listed in the list of references.

Again, use the same format and style in all reference items.