

Common Formatting Mistakes in Technical Writing

Harish Varma Indukuri (MSc, 2013)

Mechanical Engineering, Indian Institute of Science, Bengaluru

Front matter

1. Lists of figures, tables, symbols, and acronyms are compulsory in a thesis. If there is space, you should include the list of symbols in journal papers; some journals do require this.
2. Abstract, lists of {figures, tables, symbols, and acronyms} should follow the table of contents page while acknowledgements page precedes the table of contents page.
3. In theses and reports, use lowercase Roman numerals to indicate the page numbers of front matter.

General

4. Justify paragraphs on both sides. Lines containing equations should use tabs to justify the equations with a left-indent (or centered, as the rule may be). But equation numbers should be right-justified with a tab used for this purpose. An example is shown next.

$$F = ma \tag{1}$$

5. Use tabs for indenting paragraphs, equations, etc.; do not use a string of spaces. So, learn to how to use tabs.
6. Fonts, sizes, typeface (normal, bold, italic) of text should be used judiciously and consistently, as per the specified norms.
7. Be consistent with spacing between lines and between paragraphs. Set them using “Paragraph” setting rather than inserting extra lines.
8. Which paragraphs should be given a tab at the start?
First paragraph of any section should not be given a tab, but following paragraphs in the section will start with a tab. Tabs should be consistent throughout the document.
9. Be consistent in spelling. For instance the word ‘behaviour’ can also be spelled as ‘behavior’, but make sure you stick to one system, US or UK.
10. Always check for “complaint” when you mean “compliant” before you finalize your document. That is, be wary of AutoCorrect feature and do not let unintended incorrect words (but correct spellings) creep in.
11. Be clear with usage of ‘that’ and ‘which’. Look up a grammar book to understand the difference between the two clearly. When you use “that”, there should not be a comma but a when you use “which”, there should be a comma before “which”.
12. There should be a space between the numerical value and its unit. Use standard units and their symbols. For example, “m” for metres, “s” for seconds, “min” for minutes, etc.
13. Units should be in normal typeface (not italics). So, do not include units in the symbol when you use MathType or Equation Editor.

14. Acronyms and abbreviations are different. IIT is an acronym for “Indian Institute of Technology”. On the other hand, “Govt.” is an abbreviation of “government”. Notice that we put a period at the end of an abbreviation. In modern usage, we do not use periods in acronyms. So, “I. I. T.” is not used; we just write it as “IIT”. But, it is “etc.”, “i.e.”, “Dr.”, and so on. Sometimes, we have short forms such as “IISc”, “MSc”, “PhD”, etc. Leave them like they are just written rather than splitting hair considering alternatives “I. I. Sc.”, or “IISc.”, etc.
15. An acronym should be expanded when it is cited for the first time. That is, on its first occurrence, CCM should be “Contact-aided Compliant Mechanism (CCM)”.
16. Insert page numbers at the bottom of the page and keep them centered.

Punctuation

17. Punctuation is important. Pick up a grammar book and learn the rules of punctuation.
18. A general rule is that there is no space before a punctuation mark but there is a space after it. Exceptions are few; learn about them.
19. Using a comma: It should be “a, b, and c” instead of “a, b and c”.
20. Do not use the archaic “:-“ punctuation mark that you probably used in your high school. A colon will do there.
21. Do not ignore the green squiggly line in Word. It points to errors in punctuation quite often.

Figures and figure captions

22. Create images in tiff format. Matlab figures should also be saved as tiff images with desired resolution (but store also Matlab figure files for any changes that might be necessary). In order to create tiff file in Matlab, in the figure window, go to file/export setup and in that choose resolution as 600 dpi or 300 dpi.
23. Figure caption should be at the bottom of the figure. It should be centre-aligned if it is a single line; in case of more than one line, then justify the text on both sides.
24. Figures should not be repeated. If you must repeat, the caption should refer to the earlier figure number.
25. Figures should not be copied from any paper/thesis. They should be original. If you must use someone else’s figure (including your group’s), it should be redrawn and proper reference should be given in the caption. You should say “(redrawn after <reference>)” at the end of the caption.
26. Figure captions should not be like ‘A DaCM’, they should be descriptive like ‘A DaCM considered for ...’. That is, they should be self-contained as much as possible. Captions running into a few sentences is alright.
27. A legend is compulsory in plots. Use different line types for different curves along with different colors. This will ensure that figures are clear in color as well as in black and white.
28. If a figure has parts a and b, use “Fig. 3.2(a)”. Make sure that figure has (a) and (b) clearly marked; do not assume that the one on the left is (a), etc.

29. If a figure has more than one part, all parts should appear on the same page. If that is not possible, use an additional figure number.
30. If you have a figure that does not need annotation, it can be an “in line” figure. All annotated figures should be in a canvas box. See the example in Fig. 1. The dimension lines should have arrows and side bars as shown in Fig. 1. Usually an angle between two seemingly vertical lines is not marked as it is done in Fig. 1. But do show the angles in other cases.

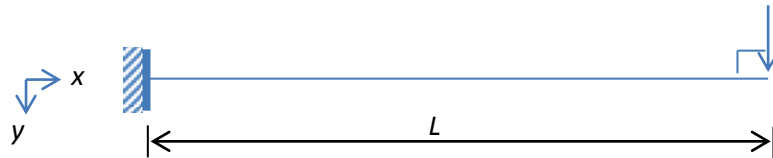


Figure 1. Annotated figure in a drawing canvas. Proper way to show a dimension line is illustrated in the figure.

31. Show the coordinate system wherever it is necessary.
32. Move text as necessary to avoid gaps in any pages. Gaps occur when you want to put the figure closest to its first citation. But remember that, with clever (no big deal!) arrangement of text, you can always avoid gaps.
33. Excess gap should not be there between figure/table/equation and the preceding or following paragraph.
34. Figure 4.3 should not be cited before citing Figure 4.2, this rule also applies for both tables and equations.
35. Avoid figure/table captions running into the next page. The figure and its caption should be on the same page. Follow this rule for equation citation too.
36. Citing Figures and Tables: both figures and tables should be cited before their first appearance. They should be either in the same page or immediately after.
37. While referring to a figure/table it should not be written as “see the Fig. 3.2”, it should be ‘see Fig. 3.2’. If there are multiple figures, use “Figs. 3.2 and 2.8”.

Tables and table captions

38. Table caption should be at the top of the table. It should be centre-aligned if it is a single line; in case of more than one line, then justify the text on both sides. Rules for citing tables are explained in the preceding points.
39. Units should be mentioned in rows/columns of a table wherever necessary.
40. Format tables as shown in Table 1. Notice that we use “Table #” with “T” in uppercase. Tables should be centered. Use “Table Tools” menu option to modify the borders as shown in Table 1. Do not use “S. No.”, “SN”, etc; just “No.” is enough to indicate the serial number.

Table 1 Formatted table

<i>No.</i>	<i>Size (m)</i>	<i>Stiffness (N/m)</i>	<i>Strength (MPa)</i>
1			
2			

Symbols and equations

41. Citing Equations: equations should be cited only after they appear. Use either Eq. (#) for a single equation and Eqs. (#, #) for multiple equations.
42. All undefined symbols in an equation should be defined just before or soon after their first use.
43. All symbols should be typed in MathType. This includes the symbol “ x -axis”. Set preferences correctly in MathType so that the font size matches with that of the font size of the text.
44. Vector and matrix should be in a different typeface from that of a scalar. There is an option in MathType to represent a vector and a matrix; use that. Use default typeset in MathType; this is safe.
45. The most frequent error is improper spacing, especially in the places where MathType symbols come in. There is an option in word (Paragraph symbol in the main menu; the symbol looks like this: ¶) that represents a space with a dot and a tab with an arrow. This option is very useful in avoiding improper spacing.

References

46. Citation of references should be consistent. We use: (author, year) in the case of a single author, (author 1 and author 2, year) in the case of two authors, and (author 1 et al., year) in the case of multiple authors.
47. Notice how “et al.” is written. It stands for “et alia”, which means “and others” in Latin. Since “alia” is shortened to first two letters, it should be “et al.” and not “et al” or “et. al.”.
48. References can also be included as numbers, e.g., [#]. In this case, all references should be numbered in the order of their first appearance.
49. While citing a reference, do not write full name of the author, just write the last name, for instance write (Varma, 2013) instead of (Hairsh Varma, 2013 or Harish, 2013)
50. Standard and consistent format should be followed in the reference list. Obey the rules of the journal.