Headings

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Abstract—**Headings should not be thrown into your paper at the last minute. There are rules for formatting, organizing, and writing them. This handout gives you IEEE guidelines for headings.**

I. OVERVIEW OF HEADINGS

Headings are useful in report writing because they do a lot of organizational work for the author and they allow readers to skim a text more quickly. Toward this end, an author should also be aware of the *visual impact* of headings: Do they stand out from the text? Do they look uncluttered and simple? Is there enough white space around them?

II. FONT STYLES

According to the general rules of document design, a paper should use no more than TWO styles of fonts, one for the title/headings, and another for the text. However, IEEE style restricts that to ONE font style: Times New Roman (see Table I below for IEEE rules on font sizes). If your teacher does not require you to follow IEEE rules, you should use a "sans-serif" font such as Arial for your headings, and a "serif" font such as Times New Roman for your text. Avoid using fonts that look old-fashioned (i.e., Courier). In the corporate world, you really don't want your professional document to look like it was created on a typewriter.

III. ORGANIZING YOUR HEADINGS

Headings are always hierarchized into different levels. How many levels and what kinds of heading you use will vary from report to report, depending on the information you are providing.

In technical writing, the 1st-level headings should be generic: Introduction, Methods, Results, Discussion, and Conclusion. (Keep in mind that these are not the only possible sections in your reports. Other kinds of sections are often appropriate: Design and Fabrication, Experimental Setup, etc.) Within each section, you may need to include 2nd-level headings. These should be more descriptive than the main-level headings, but still brief. A good rule of thumb is to make your 2nd-level headings no longer than 4-5 words.

Headings should never be "stacked" together without any text between them. At the very least, you need one or two sentences that state the main point of that section before you start into the subsections.

Another general rule is that when you divide a section into subsections, you need to have at least two subsections. Obviously, you cannot "divide" something into just one piece. Furthermore, those subsections should be of similar lengths so that your entire section appears balanced.

A. Heading Levels

Differences in heading levels are visually depicted by using gradations in font size and style. You might also choose to label your headings using Roman numerals and letters of the alphabet. However, if you choose to enumerate one section heading, you must do them all.

- *Title:* Titles are centered at the top of the page, with your name and other information centered underneath. Leave one blank line between the title and author information. IEEE style requires TNR 24pt for the main title and TNR 10pt for the author information. Do not bold either of these elements.

Title
Author Info

- *First-level heading*: Main section headings are enumerated by Roman numerals and are centered above the text and within the column margins. (See "I. OVERVIEW OF HEADINGS," above.) In IEEE format, use TNR 8pt Small Caps. Separate the heading from the following text with one blank line.

I. FIRST-LEVEL HEADING

- *Second-level heading*: Enumerate this level with capital letters. (See "*A. Heading Levels*," above.) These headings are flush left, and separated from the text with one blank line. For IEEE style, use TNR 10pt Italics.

A. Second-level Heading

- **Third-level heading:** These are enumerated with Arabic numerals and a parentheses. [See "*1) Title,*" above.] They should be indented like a paragraph, followed by a colon and a single space. Do not leave a blank line; start immediately with your first sentence on that same line. IEEE style requires TNR 10pt Italics for this level.

1) Third-level Heading: Text follows here.

- **Fourth-level heading:** It is generally not a good idea to use headings at this level. If you must do so, try using bullets instead of headings. (Please note that bulleted items should follow parallel structure. In other words, all items should be grammatically similar. For example, both of the items below are in the form of a complete sentence.) For IEEE style, this level of heading is identical to third-level, except lower-case alphabet letters are used as labels, and only the first letter of the first word is capitalized:

a) Fourth-level heading: These headings are sometimes called "quaternary" headings.

b) Another fourth-level heading: You don't have to remember "quarternary."

IV. PARALLELISM

When creating lower-level headings that are descriptive rather than generic, you should be consistent in the grammatical structure of each level of headings. For example, if you have one heading that is a *noun phrase* ("Imbalance Due to Geometrical Imperfections"), then you must make all your other headings on that level noun phrases. You cannot suddenly switch to a *participial phrase* like "Inducing Imbalance via Eddy Currents."

You might also choose *partial statements* like "Sample Rotated to Vary Field Angle" or *questions* like "Why the Magnetic Vector Potential?"

Whichever kind of heading you choose, all the headings in that level must be grammatically similar. You may switch the kinds of phrases between levels, but not within levels.

V. IEEE GUIDELINES

If your teacher requires you to use IEEE guidelines for heading fonts, please refer to Table I below [1].

TABLE I.
IEEE GUIDELINES ON TYPE SIZES FOR CAMERA-READY PAPERS, AS OF SEPT. 2006

Type size (pts.)	Appearance*		
	Regular	Bold	Italic
6	Table captions, table superscripts		
8	Section titles, references, tables, table names, first letters in table captions, figure captions, footnotes, text subscripts, and superscripts		
9			*Abstract*
10	Authors' affiliations, main text, equations, first letters in section titles		**Subheadings**
11	Authors' names		
24	Paper title		

* All font instructions refer to Times New Roman, which is the only font permitted in the IEEE guidelines.

REFERENCES

The heading title for "References" is not numbered, but it is centered as a first-level heading.

[1] Institute of Electrical and Electronic Engineers, Inc. (n.d.). [Online]. Preparation of papers in two-column format for the proceedings of conferences sponsored by IEEE. Available: www.ieee-wcnc.org/2006/images/template.pdf   September 5, 2006 [date accessed].