A Sample Paper

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***Abstract*—This document was created to learn how to create a LaTeX article using the IEEE article template IEEEtran.**
***Index Terms*—This, Is, How, I, Am, Listing-keywords**

I. Introduction

This document is a model and instructions for LaTeX[1]. This section is numbered automatically with the roman numeral **??** because it is my first use of the section command.

Furthermore, I did not type the roman numeral. Instead, I used \label{Intro}[2]to create an 'alias' to the Introduction section number, and then referenced the number by using \ref{Intro}[2].

The section command takes one argument, and IEEEtran formats the argument, ***'Introduction'***, as the title of the sectioin.

II. Ease of Use

A. My First Subsection

This is a subsection named *'My First Subsection'* that sits within the section ***Ease of Use***. It should be sectioned by **??** and the roman numeral **??**

B. Meaning of Life

This subsection is named *'Meaning of Life'* due to its enumeration being **??**. Some would say that the meaning of life is to realize one's true purpose or potential, such as mastering LaTeXor getting a freshman internship.

III. Math

Math in Latex takes two main forms.

A. equations

The first, and most useful for this style of paper, is a \begin{equation} command. Seen below, it spaces and fonts an equation to emphasize its importance. It is also numbered, and can be referenced just line sections and subsections with the combination of the \label{*marker*} and \ref{*marker*} commands.

$$a + b = \gamma \tag{1}$$

$$c - d = \aleph \tag{2}$$

[1]This is the first footnote

[2]in order to write these two phrases, I used `\textbackslash` *`command`* `\{`*`marker`*`\}`

B. In-Line

The second flavor of Math in Latex is in-line. By using the math mode, you can show that $a+b=\gamma$ is (**??**) and $c-d=\aleph$ is (**??**) without breaking the text. This is done simply by typing \$left side=right side\$.

IV. LaTeX as a tool

A. Items and Love

- Here is an example of a bulleted list.
- One might use this to list all of the ways they love LaTeX
  1) It automagically indents nested lists, even unumerations inside unordered.
  2) It keeps track of how many equations you've made, and labels it for you.
  3) By using Latex (and the hard work of some nerd at IEEE), you can make even the worst crap ever written look absolutely gorgeous.

B. Some Common Mistakes

The good[3]people at IEEE are extremely opinionated over what *exactly* is considered good writing. Here are their suggestions.

- The word "data" is plural, not singular.
- The subscript for the permeability of vacuum μ_0, and other common scientific constants, is zero with subscript formatting, not a lowercase letter "o".
- In American English, commas, semicolons, periods, question and exclamation marks are located within quotation marks only when a complete thought or name is cited, such as a title or full quotation. When quotation marks are used, instead of a bold or italic typeface, to highlight a word or phrase, punctuation should appear outside of the quotation marks. A parenthetical phrase or statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical sentence is punctuated within the parentheses.)

[3]In Plato, perfect goodness is the Form of the Good, upon which everything that has being is ontologically and causally dependent. In Aristotle, the good is identified with the end or purpose of a natural being. The good is that towards which all things move for the fulfilment of their natures. By the time of Aquinas, medieval philosophers had identified the good in both the Platonic and Aristotelian senses with the Christian God and had argued that God is both the perfectly good creative source and the perfectly good end of all beings other than himself.

- A graph within a graph is an “inset”, not an “insert”. The word alternatively is preferred to the word “alternately” (unless you really mean something that alternates).
- Do not use the word “essentially” to mean “approximately” or “effectively”.
- In your paper title, if the words “that uses” can accurately replace the word “using”, capitalize the “u”; if not, keep using lower-cased.
- Be aware of the different meanings of the homophones “affect” and “effect”, “complement” and “compliment”, “discreet” and “discrete”, “principal” and “principle”.
- Do not confuse “imply” and “infer”.
- The prefix “non” is not a word; it should be joined to the word it modifies, usually without a hyphen.
- There is no period after the “et” in the Latin abbreviation “et al.”.
- The abbreviation “i.e.” means “that is”, and the abbreviation “e.g.” means “for example”.

C. Figures and Tables

a) Positioning Figures and Tables: Place figures and tables at the top and bottom of columns. Avoid placing them in the middle of columns. Large figures and tables may span across both columns. Figure captions should be below the figures; table heads should appear above the tables. Insert figures and tables after they are cited in the text. Use the abbreviation “Fig. **??**”, even at the beginning of a sentence.

TABLE I
TABLE TYPE STYLES

Table Head	**Table Column Head**		
	Table column subhead	***Subhead***	***Subhead***
copy	More table copy[a]		

[a]Sample of a Table footnote.

Fig. 1. Example[4]of a figure caption.

REFERENCES

Please number citations consecutively within brackets [**?**]. The sentence punctuation follows the bracket [**?**]. Refer simply to the reference number, as in [**?**]—do not use “Ref. [**?**]” or “reference [**?**]” except at the beginning of a sentence: “Reference [**?**] was the first ...”

Number footnotes separately in superscripts. Place the actual footnote at the bottom of the column in which it was cited. Do not put footnotes in the abstract or reference list. Use letters for table footnotes.

Unless there are six authors or more give all authors’ names; do not use “et al.”. Papers that have not been published, even if they have been submitted for publication, should be cited as “unpublished” [**?**]. Papers that have been accepted for publication should be cited as “in press” [**?**]. Capitalize only the first word in a paper title, except for proper nouns and element symbols.

For papers published in translation journals, please give the English citation first, followed by the original foreign-language citation [**?**].

[4]Fear not, Charles Joseph Minard, I only intend to show the possible *existence* of a figure, not an actual one

REFERENCES

[1] G. Eason, B. Noble, and I. N. Sneddon, “On certain integrals of Lipschitz-Hankel type involving products of Bessel functions,” Phil. Trans. Roy. Soc. London, vol. A247, pp. 529–551, April 1955.

[2] J. Clerk Maxwell, A Treatise on Electricity and Magnetism, 3rd ed., vol. 2. Oxford: Clarendon, 1892, pp.68–73.

[3] I. S. Jacobs and C. P. Bean, “Fine particles, thin films and exchange anisotropy,” in Magnetism, vol. III, G. T. Rado and H. Suhl, Eds. New York: Academic, 1963, pp. 271–350.

[4] K. Elissa, “Title of paper if known,” unpublished.

[5] R. Nicole, “Title of paper with only first word capitalized,” J. Name Stand. Abbrev., in press.

[6] Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, “Electron spectroscopy studies on magneto-optical media and plastic substrate interface,” IEEE Transl. J. Magn. Japan, vol. 2, pp. 740–741, August 1987 [Digests 9th Annual Conf. Magnetics Japan, p. 301, 1982].

[7] M. Young, The Technical Writer’s Handbook. Mill Valley, CA: University Science, 1989.