How to use IEEEtran LaTeX class

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LaTeX 101

What the heck is LaTeX?

LaTeX is a document preparation system for high-quality typesetting. It is most often used for medium-to-large technical or scientific documents but it can be used for almost any form of publishing.
LaTeX is not a word processor! Instead, LaTeX encourages authors not to worry too much about the appearance of their documents but to concentrate on getting the right content[1].

Why should I use LaTeX?

There are many other conventional options like Microsoft Word, LaTeXcan easily adapt and develop new command, environment or stencil to be used in mathematics, chemistry, physics, music and other fields [2].

Installing LaTeX

Follow the next steps to get a proper working TeXWorks

1. Install basic MikeTeX,
2. Install TeXWorks

or just create a Overleaf account!

Document structure

A LaTeX document has two main parts: preamble and body[?]. The preamble contains general configuration that modifies entire document, commonly are the first lines of code and looks like:

```
\documentclass[options]{documentclass}
\usepackage[opciones]{package}
...
```

The body always is between the next code environment:

```
\begin{document}
- Put your code here -
\end{document}
```

IEEE class

There are a number of class options that can be used to control the overall mode and behavior of IEEEtran, e.g.

```
\documentclass[9pt,draft]{IEEEtran}
\usepackage{amsmath}
\usepackage{lipsum}
\usepackage[utf8]{inputenc}
\usepackage[spanish]{babel}
...
```

Paper title

Titles are generally capitalized except for words such as a, an, and, as, at, but, by, for, in, nor, of, on, or, the, to and up, which are usually not capitalized unless they are the first or last word of the title. Line breaks (\\) may be used to equalize the length of the title lines. Do not use math or other special symbols in the title.

```
\documentclass[9pt,draft]{IEEEtran}
\usepackage{amsmath}
\usepackage{lipsum}
\usepackage[utf8]{inputenc}
\usepackage[spanish]{babel}
\title{How to Use the IEEEtran \LaTeX{} Class}
...
```

Author names

The name and associated information is declared with the \ author command.

```
\documentclass[9pt,draft]{IEEEtran}
\usepackage{amsmath}
\usepackage{lipsum}
\usepackage[utf8]{inputenc}
\usepackage[spanish]{babel}
\title{How to Use the IEEEtran \LaTeX{} Class}
\author{Chavez-Campos~Gerardo~Marx,
~\IEEEmembership{Member,~IEEE.} %
\thanks{This work was supported by the IEEE.}}
\begin{document}
\maketitle
\end{document}
```

Abstract

The abstract is generally the first part of a paper after \ maketitle. The abstract text is placed within the abstract environment:

```
\documentclass[options]{IEEEtran}
- Preamble -
\begin{document}
\maketitle
\begin{abstract}
Put here your abstract ...
\end{abstract}
\end{document}
```

Math, special symbols and/or citations should generally not be used in abstracts

Index terms

Journal and technote papers also have a list of key words (index terms) which can be declared with:

```
\begin{IEEEkeywords}
Broad band networks, quality of service, WDM.
\end{IEEEkeywords}
```

Sections and their headings are declared in the usual LATEX fashion via \section, \subsection, \subsubsection, and \paragraph. While the first letter of a journal paper is a large, capital, oversized letter which descends one line below the baseline.

```
% Body of document %
\section{Introduction}
\IEEEPARstart{T}{he} LED technology ...
...
```

Equation and eqref

Equations are created using the traditional equation environment:

```
- Body of document -
\begin{equation}
\label{eqn_example}
x = \sum\limits_{i=0}^{z} 2^{i}Q
\end{equation}

... as can seen in \eqref{eqn_example} ...
```

```
- Body of document -
\figurename \ref{fig:sim}

\begin{figure}[!t]
\centering
\includegraphics[width=2.5in]{myfigure}
\caption{Simulation results for the network.}
\label{fig:sim}
\end{figure}
```

```
- Body of document -
\tablename \label{tb:example}

\begin{table}[!t]
\renewcommand{\arraystretch}{1.3}
\caption{A Simple Example Table}
\label{tb:example}
\centering
\begin{tabular}{c||c}
\hline
\bfseries First & \bfseries Next\\
\hline\hline
1.0 & 2.0\\
\hline
\end{tabular}
\end{table}
```

– Body of document –

```
\begin{itemize}[\IEEEsetlabelwidth{Z}]
\item[X] blah
\item[Y] blah
.
.
\end{itemize}
```


[LaTeX project, 2015] http://latex-project.org
An introduction to LaTeX, a document preparation system.


[Nokyotsu, 2014] http://nokyotsu.com.
LaTeX Fácil: Guía rápida de LaTeX