Preparing Your Paper in LaTeX for Nepalese Journal of Civil Engineering

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Abstract

This is a working template for the research article for Nepalese Journal of Civil Engineering. The template has been typeset in LaTeX. You have to replace certain sections of this template by your content and produce a pdf file as final output. Format for different types of elements that could occur in the paper are already defined in this template. The authors are to strictly follow the style/formatting as defined in this template for consistencies in a single paper and across different papers. The contents of the paper appears in a two column format, with an exception of the paper title, author names, affiliations, abstract and keywords. Your paper should be limited to 8 pages and abstract should not exceed 300 words. Each of the keywords need to be separated by commas as given in the example below.

Keywords

Nepalese Journal of Civil Engineering, LaTeX , Template, Department of Civil Engineering, Pulchowk Campus, Institute of Engineering

1. Introduction

In word processing softwares like Microsoft Word, it is very likely that people create unorganized document, whereas in typesetting software environment like LaTeX, one has to create a document in an organized fashion. On the other hand, LaTeX is being adapted as the standard tool for producing technical documents by most of the top class universities, institutions, and journals. A lot of resources for learning LaTeX can be found online. It would take 10–20 hours of learning for getting started with LaTeX.

2. What is LaTeX?

LaTeX is a document preparation system for the TeX typesetting program. It offers programmable desktop publishing features and extensive facilities for automating most aspects of typesetting and desktop publishing, including numbering and cross-referencing, tables and figures, page layout, bibliographies, and much more.

- A family of programs designed to produce publication-quality typeset documents.
- Particularly good at working with mathematical symbols.
- WYSIWYM[1] rather than WYSIWYG[2].

The history of LaTeX begins with a program called TeX. In 1978, a computer scientist by the name of **Donald Knuth** grew frustrated with the mistakes that his publishers made in typesetting his work. He decided to create a typesetting program that everyone could easily use to typeset documents, particularly those that include formulae, and made it freely available.

Knuth's product is an immensely powerful program, but one that does focus very much on small details. A mathematician and computer scientist by the name of Leslie Lamport wrote a variant of TeX called LaTeX that focuses on document structure rather than such details.

There are two major standard distributions of LaTeX:

- TeXLive
  https://www.tug.org/texlive/
- MikTeX
  https://miktex.org/

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[1]What You See Is What You Mean
[2]What You See Is What You Get

These are freely downloadable from the internet. TeXLive works in all the major PC platforms like Windows, Unix, Linux, and Mac. Whereas, MikTeX is for Windows only. When you install these, you also get the TeXWorks editor as your frontend. More than a dozen other frontend GUIs are available for LATEX. Some of these are:

- TeXMaker
  http://www.xm1math.net/texmaker/
- TeXnic Center
  http://www.texniccenter.org/

3. Template Structure

This LATEX template resides on a folder with the following files/folder:

article.tex The main LATEX source file of this document. Working Example on using the template with some description.

article.pdf Produced by compiling article.tex.

pagenum.tex Contains the code for starting page number which will be edited during final compilation.

NJCE.cls LATEX class file for managing the styles and formats of the document. Prohibited to edit.

refs.bib File for placing the bibliography data in BibTeX format.

Graphics Folder for keeping all the final graphics files (.jpg, .png, etc.) used in the document.

Assets Folder for keeping all the codes/source files (.docx, .doc, .xls, .xlsx, .m, etc.) used to generate graphs, illustrations, etc.

4. Sections

Paragraphs within a document can be separated just by leaving a blank line between them.

LATEX supports section headings upto 3 levels via the following commands:

- \section{...}
- \subsection{...}
- \subsubsection{...}

These have been illustrated properly in section 8 of this example. You can use their starred variants given below to suppress section numbering which has been demonstrated in the *Acknowledgment* section.

- \section*{...}
- \subsection*{...}
- \subsubsection*{...}

5. Typesetting Mathematics

LATEX has very rich features for typesetting mathematics. Please refer to LATEX and AMSmath manuals or online resources for further information. Here are a few examples.

The formula given in equation 1 can be used to determine the roots of a quadratic equation of the form:

$$ax^2 + bx + c = 0$$

Here, a, b, and c are constants/coefficients and x is a variable.

Numbered equation:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \tag{1}$$

Equation without a number

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Here comes an array of equations:

$$a_{11}x_1 + a_{12}x_2 + a_13x_3 = b_1 \tag{2}$$
$$a_{21}x_1 + a_{22}x_2 + a_33x_3 = b_2 \tag{3}$$
$$a_{31}x_1 + a_{32}x_2 + a_33x_3 = b_3 \tag{4}$$

6. Creating Tables

Table 1 is an example of a simple table in LATEX. To create complex tables, please refer to LATEX manuals or online resources. Use \begin{table*} to take up the entire page width. However, the use of tables spanning the entire page width is discouraged as it needs extra caution.

Table 1: No. of Undergraduate intake at Pulchowk

SN	Year	No. of papers
1	Civil	192
2	Mechanical	48
3	Electrical	48
4	Electronics	48
5	Computer	96
6	Architecture	48
7	Aerospace	48
	Total	528

An easy alternate to create tables is online platforms like `tablesgenerator.com` where you can either create a table from scratch or copy/paste tables from word processors or spreadsheets and export the equivalent LaTeXcode.

7. Placing Figures

One can generate technical graphs or diagrams from LaTeX also, but this requires another level of expertise. Another alternate is to use R-programming code to generate graphs on the fly thus producing reproducible documents, which requires S-Weave. However, it is very common to include figures (.pdf, .png, .jpg, etc.) generated from other sources or programs. Here are a few examples on placing figures with proper captioning and label for cross referencing. The most suitable format for figure files to produce final output in raster format as pdf are:
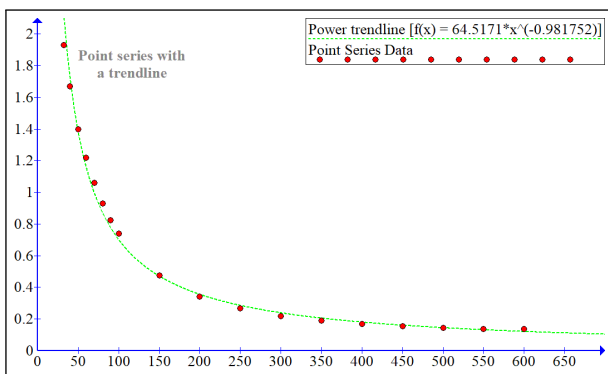

Figure 1: Figure taking up 95% width of the column

Figure 1 takes up 95% of the width of a column and Figure 2 takes the width of the entire width of the page.

8. Lists

8.1 Simple Lists

Simple Bulleted and Numbered lists have already been presented in Section 8 and Section 7 respectively.

8.2 Nested Lists

Lists can be nested upto three levels in LaTeX.

8.2.1 Numbered Nested List

Here is a nested numbered list:

1. Fruits
    (a) Apple
    (b) Orange
2. Vegetables
    (a) Spinach
    (b) Carrot

8.2.2 Bulleted Nested List

Here is a nested bulleted list:

- Fruits
    - Apple
    - Orange
- Vegetables
    - Spinach
    - Carrot

8.2.3 Mixed Nested List

Here is a mixed nested list:

1. Fruits
    - Apple
    - Orange
2. Vegetables
    - Spinach
    - Carrot

8.3 Description List

This is for dictionary-like word and description list.

Word Definition ...

Concept Explanation ...

Idea Text ...

Figure 2: Placing a wide picture [Discouraged! as it always appears at the top of a page (next available page).]

9. Paragraphs with heading

Hello Place your paragraph heading inside the curly braces and your paragraph text here.

10. Referencing

The list of references should be produced using BibTeX. The BibTeX entries should be placed in the "refs.bib" file. Please refer BibTeX manuals or online resources on creating bibliography databases using BibTeX and citation. You can easily create bibliography database files using the GUIs like TeXMaker or JabRef. You can even search for BibTeX entries for a majority of publications at Google Scholar, Research Gate, or similar sites:

`https://scholar.google.com`

`https://researchgate.net`

Examples: This is citation one (Lamport, 1994) and these are two citations in one (Oetiker et al., 2001, Kopka and Daly, 1995).

Here you have a textual citation:
Kopka and Daly (1995) is a good place to learn about LATEX .

`\citep{...}` is used for parenthetical citation

`\citet{...}` is used for textual citation

11. Compilation

Since, this template contains citations and cross referencing along with reference list generated via BibTeX, the LATEX source file should be processed four times in the following sequence to generate the final pdf output.

Compilation Steps:

1. PDFLatex
2. BibTeX
3. PDFLatex
4. PDFLatex

Do not worry, if there is an extra blank page at the end of the paper, this is an intended behavior. It happens to make the number of pages of the paper even, if the paper ends in an odd-numbered page. This is to make sure that every other article always starts with an odd-numbered page.

12. Submission

Before submitting the paper, the source file must be compiled without any error. The files that need to be submitted are:

- article.tex
- article.pdf
- pagenum.tex
- refs.bib
- NJCE.cls
- Graphics folder
- Assets folder

All these should be placed in compressed / zipped folder and submitted electronically.

13. Review

Your paper will be peer reviewed in blind by expert(s) before the publication. Comments may be provided in the submitted pdf file. You have to re-submit your paper by recompiling the LATEX source file as described in section 11 and submit as described in section 12.

Still Having Problem?

There are a lot of online tutorials on LATEX available for free download. One of them being *LaTeX Tutorials – A Primer* by Indian TEX Users Group (Indian TEXUsers Group, n.d.).

Further, there are websites like `sharelatex.com`, `overleaf.com`, etc., which are very helpful in finding out how to perform a specific task in LATEX .

If you still face technical problems in compiling your document in LATEX using this template, please feel free to contact the primary author of this template via the following email address:

`jayandra@ioe.edu.np`

Future Enhancements

Lately, there has been a lot of demand for the creation of reproducible documents in research. One of the alternates in producing publication quality reproducible documents is the combination of LATEX and R-programming called S-weave.

In the near future, NJCE is planning to adapt this mechanism to support reproducibility of research documents. Thus, you are highly encouraged to adapt this philosophy starting from this edition of NJCE.

This template has undergone a few iterations of improvement over the past few years and is constantly evolving. Please feel free to send in your valuable comments/suggestions and/or feature requests via email to the primary author of this template.

Acknowledgments

References

Indian TEXUsers Group (n.d.). *LaTeX Tutorials – A Primer*, Indian TEXUsers Group.

Kopka, H. and Daly, P. (1995). A guide to {\LaTeX}– document.

Lamport, L. (1994). *LaTeX: A document preparation system, User's guide and reference manual*, 2nd edn, Addison-Wesley Professional.

Oetiker, T., Partl, H., Hyna, I. and Schlegl, E. (2001). The not so short introduction to latex 2ε.

Reviewer Guidelines

- Since the papers are sent for blind review, they should not contain the true author information.
- PDF version of the assigned paper can be downloaded from "**Review Files**" section from either of the following tabs:
  - ○ **1. Request**
  - ○ **3. Download & Review**
- To proceed, click the button "**Continue to Step #3**"
- In "**3. Download & Review**" tab, some general comments can be typed in the two text boxes:
  - ○ Use the *first box to enter comments for authors* which will also be visible to editors.
  - ○ Use the *second box to enter comments only for editors* which is not visible to the authors.
- Specific comments shall be marked in the downloaded pdf file using software like adobe acrobat reader or similar software.
- The commented file shall be saved and uploaded from the "**Upload**" section of the third tab - "**3. Download & Review**".
- **Recommendation** should be chosen from the given options:
  - ○ **Accept Submission**: it is ready to go to Copyediting as is.
  - ○ **Revisions Required**: it requires minor changes that can be reviewed and accepted by the editor.
  - ○ **Resubmit for Review**: it requires major changes and another round of peer review.
  - ○ **Resubmit Elsewhere**: it doesn't seem like a good fit for the focus and scope of this journal.
  - ○ **Decline Submission**: it has too many weakness to ever be accepted.
  - ○ **See Comments**: if none of the above recommendations make sense, you can leave a comment for the editor detailing your concerns.
- Finally Submit using the "**Submit Review**" button.

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