IIT PATNA B.TECH PROJECT TEMPLATE

A Project Report Submitted

by

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THESIS CERTIFICATE

This is to certify that the thesis titled **OPTIMAL CHARGING OF HYBRID ELEC-TRIC VEHICLE IN SMART GRID ENVIRONMENT**, submitted by **Venkatesh Chaturwedi** , to the Indian Institute of Technology, Patna, for the award of the degree of **Bachelor of Technology**, is a bona fide record of the research work done by him under our supervision. The contents of this thesis, in full or in parts, have not been submitted to any other Institute or University for the award of any degree or diploma.

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Thanks to all those who made TEX and LATEX what it is today.

ABSTRACT

KEYWORDS: LaTeX; Thesis; Style files; Format.

A LaTeX class along with a simple template thesis are provided here. These can be used to easily write a thesis suitable for submission at IIT-Patna. The class provides options to format PhD, MS, M.Tech. and B.Tech. thesis. It also allows one to write a synopsis using the same class file. Also provided is a BIBTeX style file that formats all bibliography entries as per the IITP format.

The formatting is as (as far as the author is aware) per the current institute guidelines.

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ABBREVIATIONS

IITP   Indian Institute of Technology, Patna

RTFM   Read the Fine Manual

NOTATION

r Radius, m

α Angle of thesis in degrees

β Flight path in degrees

CHAPTER 1

INTRODUCTION

This document provides a simple template of how the provided `iitpdiss.cls` LaTeX class is to be used. Also provided are several useful tips to do various things that might be of use when you write your thesis.

Before reading any further please note that you are strongly advised against changing any of the formatting options used in the class provided in this directory, unless you are absolutely sure that it does not violate the IITP formatting guidelines. *Please do not change the margins or the spacing.* If you do change the formatting you are on your own (don't blame me if you need to reprint your entire thesis). In the case that you do change the formatting despite these warnings, the least I ask is that you do not redistribute your style files to your friends (or enemies).

It is also a good idea to take a quick look at the formatting guidelines. Your office or advisor should have a copy. If they don't, pester them, they really should have the formatting guidelines readily available somewhere.

To compile your sources run the following from the command line:

```
% latex thesis.tex
% bibtex thesis
% latex thesis.tex
% latex thesis.tex
```

Modify this suitably for your sources.

To generate PDF's with the links from the `hyperref` package use the following command:

```
% dvipdfm -o thesis.pdf thesis.dvi
```

1.1 Package Options

Use this thesis as a basic template to format your thesis. The `iitpdiss` class can be used by simply using something like this:

```
\documentclass[PhD]{iitpdiss}
```

To change the title page for different degrees just change the option from `PhD` to one of `MS`, `MTech` or `BTech`. The dual degree pages are not supported yet but should be quite easy to add. The title page formatting really depends on how large or small your thesis title is. Consequently it might require some hand tuning. Edit your version of `iitpdiss.cls` suitably to do this. I recommend that this be done once your title is final.

To write a synopsis simply use the `synopsis.tex` file as a simple template. The synopsis option turns this on and can be used as shown below.

```
\documentclass[PhD,synopsis]{iitpdiss}
```

Once again the title page may require some small amount of fine tuning. This is again easily done by editing the class file.

This sample file uses the `hyperref` package that makes all labels and references clickable in both the generated DVI and PDF files. These are very useful when reading the document online and do not affect the output when the files are printed.

1.2 Example Figures and tables

Fig. 1.1 shows a simple figure for illustration along with a long caption. The formatting of the caption text is automatically single spaced and indented. Table 1.1 shows a sample table with the caption placed correctly. The caption for this should always be placed before the table as shown in the example.

Figure 1.1: Two IITP logos in a row. This is also an illustration of a very long figure caption that wraps around two two lines. Notice that the caption is single-spaced.

Table 1.1: A sample table with a table caption placed appropriately. This caption is also very long and is single-spaced. Also notice how the text is aligned.

x	x^2
1	1
2	4
3	9
4	16
5	25
6	36
7	49
8	64

1.3 Bibliography with BIBTEX

I strongly recommend that you use BIBTEX to automatically generate your bibliography. It makes managing your references much easier. It is an excellent way to organize your references and reuse them. You can use one set of entries for your references and cite them in your thesis, papers and reports. If you haven't used it anytime before please invest some time learning how to use it.

I've included a simple example BIBTEX file along in this directory called `refs.bib`. I have used `IEEEtran.bst` as a bibliography style file. Basically, to cite like `IEEE` format use `\cite{key}` where `key` is the citation key for your bibliography entry. The following paragraph shows how citations can be used in text effectively.

[1] tells us how to use `IEEEtran.bst`. Read the `IEEEtran` package documentation for more details on how to cite things differently.

Here are other references for example. [2] presents a Multi-objective Harmony search algorithm for power system problem. [3] illustrates a hybrid algorithm for power system problem.

APPENDIX A

A SAMPLE APPENDIX

Just put in text as you would into any chapter with sections and whatnot. Thats the end of it.

REFERENCES

[1] "The ieeetran bibtex style," accessed: 2008-09-30. [Online]. Available: http://www.michaelshell.org/tex/ieeetran/bibtex/

[2] S. Sivasubramani and K. Swarup, "Environmental/economic dispatch using multi-objective harmony search algorithm," *Electr. Power Syst. Res.*, vol. 81, no. 9, pp. 1778 – 1785, 2011.

[3] ——, "Sequential quadratic programming based differential evolution algorithm for optimal power flow problem," *IET Gener. Transm. Distrib.*, vol. 5, no. 11, pp. 1149–1154, 2011.