

Generic Title (Edit the L^AT_EX Preamble from Document/Settings)

A Project Report

submitted by

AMIT ANIL KULKARNI

*in partial fulfilment of the requirements
for the award of the degree of*

MASTER OF TECHNOLOGY



**DEPARTMENT OF ELECTRICAL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY, MADRAS.**

April 2016

THESIS CERTIFICATE

This is to certify that the thesis entitled **Generic Title (Edit the \LaTeX Preamble from Document/Settings)**, submitted by **Amit Anil Kulkarni**, to the Indian Institute of Technology Madras, for the award of the degree of **Master of Technology**, is a bona fide record of the research work carried out by him under my 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.

Dr. Pradeep Sarvepalli
Research Guide
Assistant Professor
Dept. of Computer Science and Engineering
IIT Madras, 600 036

Place: Chennai

Date:

ACKNOWLEDGEMENTS

I would like to thank everyone who helped me in my project.

ABSTRACT

KEYWORDS: IIT Madras Thesis Template L^AT_EX

The T_EX templates available online were last updated in 2009. Naturally, they didn't compile. Including PNG/JPG files in them was not straightforward either. So I decided to port the T_EX file to L^AT_EX. However, the whole process turned out to be way more complicated than I thought.

A simple tex2lyx failed with a trillion errors. I had to make iitmdiss.cls work with L^AT_EX. After an hour of tinkering, the tex2lyx conversion was finally successful with no errors and a bunch of warnings. This wasn't the end, though. The lyx document failed to compile. Sections were missing, formatting was wonky. Another four hours on the internet. A lot of tweaking. Now it gives *exactly* identical output as that of the tex file. Another hour spent to make png/jpeg work. Converting every image to eps is frustrating.

The point is, porting that stupid T_EX file to L^AT_EX took a whole night. I hope it will be worth it for everyone in the long run.

- No more fumbling around in the sea of code. WYSIWYG.
- This file works with png, jpg and whatever graphics formats you throw at it.

I'm no T_EXpert. And despite it does the job, this file isn't exactly pretty. Feel free to suggest changes and share it with others.

Oh, and don't remove any of the grey boxes. They're very necessary.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	i
ABSTRACT	ii
LIST OF TABLES	iv
LIST OF FIGURES	v
ABBREVIATIONS	vi
NOTATION	vii
1 INTRODUCTION	1
1.1 Package Options	2
1.2 Example Figures and tables	3
1.3 Bibliography with BIB _T EX	4
1.4 Other useful L _T EX packages	5
A A SAMPLE APPENDIX	6

LIST OF TABLES

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.	4
-----	---	---

LIST OF FIGURES

- 1.1 An image that has nothing to do with this article or the knowledge of holding a soldering iron. The other one is clearly an easter egg. 3

ABBREVIATIONS

IITM	Indian Institute of Technology, Madras
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 `iitmdiss.cls` L^AT_EX 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 IITM 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 `iitmdiss` class can be used by simply using something like this:

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

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 `iitmdiss.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]{iitmdiss}
```


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 BIB_TE_X

I strongly recommend that you use BIB_TE_X 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 BIB_TE_X file along in this directory called `refs.bib`. The `iitmdiss.cls` class package which is used in this thesis and for the synopsis uses the `natbib` package to format the references along with a customized bibliography style provided as the `iitm.bst` file in the directory containing `thesis.tex`. Documentation for the `natbib` package should be available in your distribution of L_AT_EX. Basically, to cite the author along with the author name and year use `\cite{key}` where `key` is the citation key for your bibliography entry. You can also use `\citet{key}` to get the same effect. To make the citation without the author name in the main text but inside the parenthesis use `\citep{key}`. The following paragraph shows how citations can be used in text effectively.

More information on BIB_TE_X is available in the book by Lamport (1994). There

are many references (Lamport, 1994; Kopka and Daly, 2003; Griffiths and Higham, 1997) that explain how to use \LaTeX . Read the `natbib` package documentation for more details on how to cite things differently. Different type of citations are book Bellman (1957), one article in the book Amarel (1968), thesis Manning (1990), technical report Ravindran and Barto (2001), journal Barto *et al.* (1995), conference Knoblock (1990) and other like url Crawford (1992).

1.4 Other useful \LaTeX packages

The following packages might be useful when writing your thesis.

- It is very useful to include line numbers in your document. That way, it is very easy for people to suggest corrections to your text. I recommend the use of the `lineno` package for this purpose. This is not a standard package but can be obtained on the internet. The directory containing this file should contain a `lineno` directory that includes the package along with documentation for it.
- The `listings` package should be available with your distribution of \LaTeX . This package is very useful when one needs to list source code or pseudo-code.
- For special figure captions the `ccaption` package may be useful. This is specially useful if one has a figure that spans more than two pages and you need to use the same figure number.
- The notation page can be entered manually or automatically generated using the `nomenc1` package.

More details on how to use these specific packages are available along with the documentation of the respective packages.

APPENDIX A

A SAMPLE APPENDIX

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

Publications

1. S. M. Narayanamurthy and B. Ravindran (2007). Efficiently Exploiting Symmetries in Real Time Dynamic Programming. *IJCAI 2007, Proceedings of the 20th International Joint Conference on Artificial Intelligence*, pages 2556–2561.

REFERENCES

- Amarel, S.**, On representations of problems of reasoning about actions. In **D. Michie** (ed.), *Machine Intelligence 3*, volume 3. Elsevier/North-Holland, Amsterdam, London, New York, 1968, 131–171. 1.3
- Barto, A. G., S. J. Bradtke, and S. P. Singh** (1995). Learning to act using real-time dynamic programming. *Artificial Intelligence*, **72**, 81–138. 1.3
- Bellman, R. E.**, *Dynamic Programming*. Princeton University Press, 1957. 1.3
- Crawford, J.** (1992). A theoretical analysis of reasoning by symmetry in first-order logic. URL citeseer.ist.psu.edu/crawford92theoretical.html. 1.3
- Griffiths, D. F. and D. J. Higham**, *Learning LaTeX*. SIAM, 1997. 1.3
- Knoblock, C. A.**, Learning abstraction hierarchies for problem solving. In **T. Dietterich** and **W. Swartout** (eds.), *Proceedings of the Eighth National Conference on Artificial Intelligence*. AAAI Press, Menlo Park, California, 1990. URL citeseer.ist.psu.edu/knoblock90learning.html. 1.3
- Kopka, H. and P. W. Daly**, *Guide to LaTeX (4th Edition)*. Addison-Wesley Professional, 2003. 1.3
- Lamport, L.**, *LaTeX: A Document Preparation System (2nd Edition)*. Addison-Wesley Professional, 1994. 1.3
- Manning, J. B.** (1990). *Geometric symmetry in graphs*. Ph.D. thesis, Purdue University. 1.3
- Ravindran, B. and A. G. Barto** (2001). Symmetries and model minimization of markov decision processes. Technical report, University of Massachusetts, Amherst. 1.3