DR EM THESIS TITLE WILL MAKE FOR TWO LINES DISSERTATION ON CLINICAL MICROBIOLOGY BACTERIOLOGY MYCOLOGY VIROLOGY IMMUNOLOGY MOLECULAR BIOLOGY

Dissertation submitted as part of fulfilment for the

M.D. (Branch- IV Microbiology) Degree examination of the

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY
CHENNAI, TAMIL NADU**

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QUOTATIONS

Some say the world will end in fire,

Some say in ice.

From what I've tasted of desire

I hold with those who favor fire.

But if it had to perish twice,

I think I know enough of hate

To say that for destruction ice

Is also great

And would suffice.

ROBERT FROST

DEDICATION

To my beloved

THESIS CERTIFICATE

This is to certify that the thesis (or project report) titled **DR EM THESIS TITLE WILL MAKE FOR TWO LINES DISSERTATION ON CLINICAL MICROBI-OLOGY BACTERIOLOGY MYCOLOGY VIROLOGY IMMUNOLOGY MOLEC-ULAR BIOLOGY**, submitted by **Name**, to the Indian Institute of Technology Madras, for the award of the degree of **Doctor of Philosophy**, is a bona fide record of the research work done by him (her) under my (our) supervision. The contents of this thesis (or project report), in full or in parts, have not been submitted to any other Institute or University for the award of any degree or diploma.

Place: Chennai

Date: 20th Sep 2019

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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-Madras. The class provides options to format PhD, MS, M.Tech., Dual Degree 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 IITM format.

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

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GLOSSARY

The following are some of the commonly used terms in this thesis:

OpenFOAM   An opensource C++ toolbox for the development of customized numerical solvers, and pre-/post-processing utilities for the solution of continuum mechanics problems, most prominently including computational fluid dynamics

CFD   A branch of fluid mechanics that uses numerical analysis and data structures to analyze and solve problems that involve fluid flows

FireFOAM   FireFOAM is a CFD solver used for LES modeling of fire and its suppression in the OpenFOAM

ABBREVIATIONS

IITM	Indian Institute of Technology Madras
NCCRD	National Centre for Combustion Research and Development
RTFM	Read the Fine Manual

NOTATION

English Symbols

R_E Radius of the earth

R_u Universal Gas Constant

Greek Symbols

α Angle of thesis in degrees

β Flight path in degrees

Miscellaneous

$|x|$ Absolute value of x

$\permil$ Per-mille (or per thousand)

CHAPTER 1

INTRODUCTION

This document provides a simple template of how the provided `iitmdiss.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 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}
```

For getting a print form of the same thesis, add the option `PrntForm` like:

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

To change the title page for different degrees just change the option from `PhD` to one of `MS`, `MTech`, `DD`, `MBA`, `MSc` or `BTech`. The other specific degrees are not supported yet but should be quite easy to add if you look at the code used to generate above degree pages in `iitmdiss.cls` file. 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}
```

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

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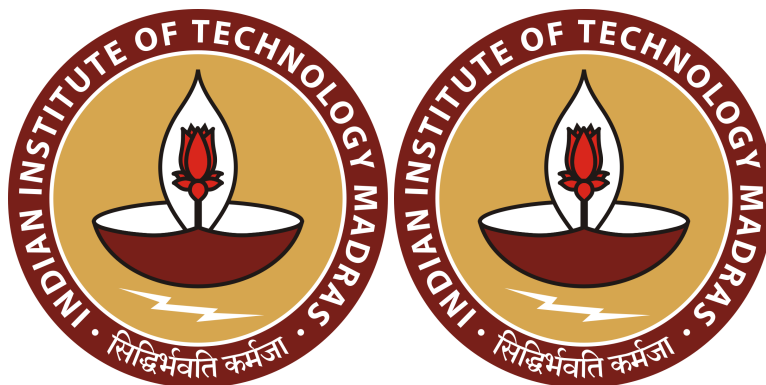
Fig. 1.1: Two IITM logos in a row. This is also an illustration of a very long figure caption that wraps around two two lines. Notice that the caption is single-spaced.

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`. 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 LATEX. 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 BIBTEX is available in the book by **?**, which is a citation for book. **?** is the same book citation in the old format where the year comes at the end. Now to cite the references within parentheses. There are many references (**?**) that explain how to use BIBTEX. Read the `natbib` package documentation for more details on how to cite things differently.

Here are other references for example. The present study has been carried out in OpenFOAM which is based on **?**. The Lagrangian solver has two injection models based on the nature of injection source viz. `pointInjection` model which injects the spray at a given point, and `detailed- SprayProfileInjection` model which injects the spray over a spherical sector of given injection radius. The configuration and experimental data to compare the spray statistics is taken from **?**

The above paragraphs had journal and book references. Other sample references to check are: for thesis **???**, for conferences **???**, for manual **?**, for book chapter **?**. One more reference, **?** with arxiv and doi.

Python (**?**) is a programming language and is cited here to show how to cite something that is best identified with a URL. For technical report, **?** is an example, and **?** is

an example of a non-technical report.

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 `nomencl` package.

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

CHAPTER 2

ANOTHER CHAPTER

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. That's the end of it.

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

APPENDIX B

ANOTHER SAMPLE APPENDIX

Another sample text

LIST OF PUBLICATIONS

I. REFEREED JOURNALS BASED ON THE THESIS

    1. Authors.... Title... *Journal*, Volume, Page, (year).

II. REFEREED JOURNALS (Others)

III. PRESENTATIONS IN CONFERENCES

    1. Authors.... Title... *Conference*, Page, (year).

IV. PUBLICATIONS IN CONFERENCE PROCEEDINGS

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