**Lorem ipsum dolor sit amet, consectetur adipiscing elit**

A **Thesis**

Submitted in Partial Fulfilment of the

Requirements for Award of the Degree of

**Doctor of Philosophy**

*by*

**AUTHOR**

**Roll No: PXXXXXXXX**

*under the supervision of*

Supervisor 1

Supervisor 2



DEPARTMENT OF CIVIL ENGINEERING

**NATIONAL INSTITUTE OF TECHNOLOGY**

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June 2019

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I would like to dedicate this thesis to my loving parents

**Acknowledgements**

And I would like to acknowledge ...

**Declaration**

I hereby declare that except where specific reference is made to the work of others, the contents of this thesis are original and have not been submitted in whole or in part for consideration for any other degree or qualification in this, or any other university. This thesis is my own work and does not contain any outcome of work done in collaboration with others, except as specified in the text and Acknowledgements.

Signature :

Name : AUTHOR

Roll No : PXXXXXXXX

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01/06/2019



**Certificate**

This is to certify that the thesis entitled **Lorem ipsum dolor sit amet, onsectetur adipiscing elit.** submitted by **NAME OF AUTHOR** to National Institute of Technology Calicut for the award of the degree of Doctor of Philosophy is a bonafide record of the research work carried out by him under my/our supervision and guidance. The content of the thesis, in full or parts have not been submitted to any other institute or university for the award of any degree or diploma.

Supervisor 1 Supervisor 2

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Civil Engineering Civil Engineering

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The committee recommends the candidate for the award of the degree of

**Doctor of Philosophy.**

Signature of External Examiner Signature of Internal Examiner

**Abstract**

This part of the thesis will be the most widely published and most read because it will be published in Dissertation Abstracts International. It is best written towards the end, but not at the very last minute because you will probably need several drafts. It should be a distillation of the thesis: a concise description of the problem(s) addressed and your method of solving it/them, your results and conclusions. An abstract must be self-contained. Usually they do not contain references. When a reference is necessary, its details should be included in the text of the abstract. The number of words may be limited to 1000 not exceeding two pages of spacing 1.5 and font type Times New Roman with size 11. The abstract should be followed by the keywords (index terms) in the same page with the title Keywords in bold face and italics

***Keywords:***

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**Nomenclature**

**Roman Symbols**

|  |  |
| --- | --- |
| *α* | Load factor for DL |
| *Β* | Load factor for LL, Factor indicating ability of the  diagonally cracked concrete to transmit tension and shear |

**Greek Symbols**

**Other Symbols**

**Acronyms / Abbreviations**

|  |  |
| --- | --- |
| C | Collapse |
| O | Operational |

Chapter 1

# Introduction

## What is loren ipsum? Title with math σ

Lorem Ipsum is simply dummy text of the printing and typesetting industry (see Section 1.3). Lorem Ipsum [1] has been the industry’s standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing Table 1.1.

Table 1.1 A formatted table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| I1MD | I1LL | I2MD | I2LL | CMD | CBL |
| 6.23 | 7.48 | 3.99 | 6.81 | 13.47 | 11.88 |
| 0.91 | 0.56 | 0.63 | 0.02 | 0.09 | 0.05 |
| 5.2 | 8.7 | 4.22 | 6.66 | 0.09 | 0.05 |
| 0.7 | 0.71 | 0.54 | 0.01 | 0.05 | 0.04 |

Table 1.1 is a formatted table.

### Nomenclature

Nomenclature includes all the symbols and abbreviations used in the thesis. For the convenience of reading, it is recommended to classify the symbols as roman, Greek, superscripts and subscripts (those applicable) and the acronyms / abbreviations.

### Page numbering

The front matter is numbered in *roman numerals* (i, ii, ….). The body of the thesis and the back matter follows the *Arabic numerals* (1, 2, 3, ...) for page numbering starting from the first page of the first chapter (Introduction).

#### Numbering sections, subsections, equations, figures etc

It is common practice to use decimal numbering in the thesis. If the chapter number is 2, the sections of the chapter will carry the numbers 2.1, 2.2, 2.3 etc. The subsections in section 2.2 will be numbered as 2.2.1, 2.2.2 etc. It is recommended to keep the maximum depth of the table of contents to this level (level 3). Differentiation of the deeper subsections can be achieved by bold faced sentence case titles. Figures and tables each chapter should be numbered from 1 and distinguished by the chapter number. Use the dotted decimal form for this purpose. For example, the figures in chapter 4 will be numbered Fig. 4.1, Fig. 4.2, etc. Similarly, the tables of chapter 4 should be numbered as Table 4.1, Table 4.2, etc. The caption of a figure should appear below the figure, with center alignment. In the case of a table, the caption should appear above it. All figures and tables should be self explanatory with proper description by captions, legends, titles of the axes and any other supplementary information. The same dotted decimal numbering scheme can be used for equations also. Figures should be referred as Figure 4.2 (of Fig. 4.2) and equations as Equation (5.8) (or Eqn. (5.8)), and tables as Table 3.8. If there are some appendices, these can be numbered as A, B, C etc. The figures, tables, and equations in these appendices can be numbered with A., B., C., etc. as prefixes.

## References

References should be numbered in *Arabic* numerals starting from 1, in the order in which they are referred to in the thesis. A typical reference in the body of the thesis will appear as “as stated by Knuth et. al. [3] or in [3] or [3-5] ”. An alternate way is the author-year format wherein the references are sorted in the alphabetical order of the surname of the first author. In such cases, the reference to an article is made as “as mentioned in (Adam and Eve 1946)”. All the articles in the list should be referred at least once in the thesis text. References to journal papers should contain the *name of the author(s), title of the paper, name of the journal, volume number, issue number, particular pages (pp) and year of publication*. Similarly conference papers should mention the *name of author(s), title of the paper, name of the conference, place in which the conference was held and date, month and year of the conference along with the page numbers of the paper in the proceedings of the conference.* References to books should contain name of the *author, title of the book, name of the publisher, edition number, ISBN number, and the year of publication*. References to the web resources should include the *month and year of access*.

## Why do we use loren ipsum?

It is a long established fact that a reader will be distracted by the readable content ofa page when looking at its layout. The point of using Lorem Ipsum is that it has amore-or-less normal distribution of letters, as opposed to using ‘Content here, contenthere’, making it look like readable English. Many desktop publishing packages andweb page editors now use Lorem Ipsum as their default model text, and a search for‘lorem ipsum’ will uncover many web sites still in their infancy. Various versionshave evolved over the years, sometimes by accident, sometimes on purpose (injectedhumour and the like).

## Where does it come from?

Contrary to popular belief, Lorem Ipsum is not simply random text. It has roots in a piece of classical Latin literature from 45 BC, making it over 2000 years old. Richard McClintock, a Latin professor at Hampden-Sydney College in Virginia, looked up one of the more obscure Latin words, consectetur, from a Lorem Ipsumpassage, and going through the cites of the word in classical literature, discovered theundoubtable source. Lorem Ipsum comes from sections 1.10.32 and 1.10.33 of "deFinibus Bonorum et Malorum" (The Extremes of Good and Evil) by Cicero, written in 45 BC. This book is a treatise on the theory of ethics, very popular during the Renaissance. The first line of Lorem Ipsum, "Lorem ipsum dolor sit amet..", comes from a line in section 1.10.32.

The standard chunk of Lorem Ipsum used since the 1500s is reproduced belowfor those interested. Sections 1.10.32 and 1.10.33 from “de Finibus Bonorum etMalorum" by Cicero are also reproduced in their exact original form, accompanied by English versions from the 1914 translation by H. Rackham

“Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod temporincididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrudexercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute iruredolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deseruntmollit anim id est laborum."

Section 1.10.32 of “de Finibus Bonorum et Malorum", written by Cicero in 45BC: “Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatiset quasi architecto beatae vitae dicta sunt explicabo. Nemo enim ipsam voluptatemquia voluptas sit aspernatur aut odit aut fugit, sed quia consequuntur magni doloreseos qui ratione voluptatem sequi nesciunt. Neque porro quisquam est, qui doloremipsum quia dolor sit amet, consectetur, adipisci velit, sed quia non numquam eiusmodi tempora incidunt ut labore et dolore magnam aliquam quaerat voluptatem.Ut enim ad minima veniam, quis nostrum exercitationem ullam corporis suscipitlaboriosam, nisi ut aliquid ex ea commodi consequatur? Quis autem vel eum iurereprehenderit qui in ea voluptate velit esse quam nihil molestiae consequatur, velillum qui dolorem eum fugiat quo voluptas nulla pariatur?"

1914 translation by H. Rackham: “But I must explain to you how all this mistaken idea of denouncing pleasure and praising pain was born and I will give you a complete account of the system, and expound the actual teachings of the great explorer of the truth, the master-builder of human happiness. No one rejects, dislikes, or avoids pleasure itself, because it is pleasure, but because those who do not know how to pursue pleasure rationally encounter consequences that are extremely painful. Nor again is there anyone who loves or pursues or desires to obtain pain of itself, because it is pain, but because occasionally circumstances occur in which toil and pain can procure him some great pleasure. To take a trivial example, which of us ever undertakes laborious physical exercise, except to obtain some advantage from it? But who has any right to find fault with a man who chooses to enjoy a pleasure that has no annoying consequences, or one who avoids a pain that produces no resultant pleasure?"

Section 1.10.33 of “de Finibus Bonorum et Malorum", written by Cicero in 45BC: “At vero eos et accusamus et iusto odio dignissimos ducimus qui blanditiis praesentium voluptatum deleniti atque corrupti quos dolores et quas molestias excepturisint occaecati cupiditate non provident, similique sunt in culpa qui officia deseruntmollitia animi, id est laborum et dolorum fuga. Et harum quidem rerum facilis est etexpedita distinctio. Nam libero tempore, cum soluta nobis est eligendi optio cumquenihil impedit quo minus id quod maxime placeat facere possimus, omnis voluptasassumenda est, omnis dolor repellendus. Temporibus autem quibusdam et aut officiisdebitis aut rerum necessitatibus saepe eveniet ut et voluptates repudiandae sint etmolestiae non recusandae. Itaque earum rerum hic tenetur a sapiente delectus, ut autreiciendis voluptatibus maiores alias consequatur aut perferendis doloribus asperioresrepellat."

1914 translation by H. Rackham: “On the other hand, we denounce with righteous indignation and dislike men who are so beguiled and demoralized by the charms of pleasure of the moment, so blinded by desire, that they cannot foresee the pain and trouble that are bound to ensue; and equal blame belongs to those who fail in their duty through weakness of will, which is the same as saying through shrinking from toil and pain. These cases are perfectly simple and easy to distinguish. In a free hour, when our power of choice is untrammelled and when nothing prevents our being able to do what we like best, every pleasure is to be welcomed and every pain avoided. But in certain circumstances and owing to the claims of duty or the obligations of business it will frequently occur that pleasures have to be repudiated and annoyances accepted. The wise man therefore always holds in these matters to this principle of selection: he rejects pleasures to secure other greater pleasures, or else he endures pains to avoid worse pains."

 (1.1)

Chapter 2

# My Second Chapter

## Reasonably Long Section Title

I’m going to randomly include a picture Figure 2.1.

If you have trouble viewing this document contact Krishna at: kks32@cam.ac.uk

or raise an issue at <https://github.com/kks32/phd-thesis-template/>

## Enumeration

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed vitae laoreet lectus. Donec lacus quam, malesuada ut erat vel, consectetur eleifend tellus. Aliquam non feugiat lacus. Interdum et malesuada fames ac ante ipsum primis in faucibus. Quisque a dolor sit amet dui malesuada malesuada id ac metus. Phasellus posuere egestas mauris, sed porta arcu vulputate ut. Donec arcu erat, ultrices et nisl ut, ultricies facilisis urna. Quisque iaculis, lorem non maximus pretium, dui eros auctor quam, sed sodales libero felis vel orci. Aliquam neque nunc, elementum id accumsan eu, varius eu enim. Aliquam blandit ante et ligula tempor pharetra. Donec molestie porttitor commodo. Integer rutrum turpis ac erat tristique cursus. Sed venenatis urna vel tempus venenatis. Nam eu rhoncus eros, et condimentum elit. Quisque risus turpis, aliquam eget euismod id, gravida in odio. Nunc elementum nibh risus, ut faucibus mauris molestie eu. Vivamus quis nunc nec nisl vulputate fringilla. Duis tempus libero ac justo laoreet tincidunt. Fusce sagittis gravida magna, pharetra



Fig. 2.1 This is just a long figure caption for the minion in Despicable Me from Pixar

Quisque risus turpis, aliquam eget euismod id, gravida in odio. Nunc elementum nibh risus, ut faucibus mauris molestie eu. Vivamus quis nunc nec nisl vulputate fringilla. Duis tempus libero ac justo laoreet tincidunt. Fusce sagittis gravida magna, pharetra.

Equations are to be written along with its number

## Why do we use loren ipsum?

It is a long established fact that a reader will be distracted by the readable content ofa page when looking at its layout. The point of using Lorem Ipsum is that it has amore-or-less normal distribution of letters, as opposed to using ‘Content here, contenthere’, making it look like readable English. Many desktop publishing packages andweb page editors now use Lorem Ipsum as their default model text, and a search for‘lorem ipsum’ will uncover many web sites still in their infancy. Various versionshave evolved over the years, sometimes by accident, sometimes on purpose (injectedhumour and the like).

Chapter 3

# Conclusions and Future Works

## First section of the third chapter

And now I begin my third chapter here . . .

### First subsection in the first section

. . . and some more

### Second subsection in the first section

. . . and some more . . .

#### First subsub section in the second subsection

. . . and some more in the first subsub section otherwise it all looks the same doesn’t

it? well we can add some text to it . . .

### Third subsection in the first section

. . . and some more . . .

#### First subsub section in the third subsection

. . . and some more in the first subsub section otherwise it all looks the same doesn’t it? well we can add some text to it and some more and some more and some more and some more and some more and some more and some more . . .

#### Second subsub section in the third subsection

. . .and some more in the first subsub section otherwise it all looks the same doesn’t it? well we can add some text to it . . .

## Second section of the third chapter

and here I write more . . .

## The layout of formal tables

This section has been modified from “Publication quality tables in LATEX\*” by Simon Fear.

The layout of a table has been established over centuries of experience and should only be altered in extraordinary circumstances.

When formatting a table, remember two simple guidelines at all times:

1. Never, ever use vertical rules (lines).
2. Never use double rules.

These guidelines may seem extreme but I have never found a good argument in favour of breaking them. For example, if you feel that the information in the left half of a table is so different from that on the right that it needs to be separated by a vertical line, then you should use two tables instead. Not everyone follows the second guideline:

There are three further guidelines worth mentioning here as they are generally not known outside the circle of professional typesetters and subeditors:

1. Put the units in the column heading (not in the body of the table).
2. Always precede a decimal point by a digit; thus 0.1 not just .1.
3. Do not use ‘ditto’ signs or any other such convention to repeat a previous value. In many circumstances a blank will serve just as well. If it won’t, then repeat the value.

A frequently seen mistake is to use ‘\begin{center}’ . . . ‘\end{center}’ inside a figure or table environment. This center environment can cause additional vertical space. If you want to avoid that just use ‘\centering.

Chapter 4

# Frequently asked questions

## FAQs regarding new Ph.D. thesis format

1. What is the paper size to be used is it B5 or B5 (JIS)?  
*B5 (JIS) (Width 7.2 in. and Height 10.1 in.)*

1. Does the content page require only from Chapter 1?

*Contents page needs details from Chapter 1 onwards only*

1. Do we need to keep List of table and list of figures in Thesis?

*List of table and list of figures is needed only for theses in Architecture only.*

1. Is there a colon after figure and table number?

*No need of colon after figure and table number.*

1. There is a colour emblem and a black white emblem in the attachment where to use each of these?

*Colour emblem is to be used in certificate page with a size of 3.5 cm keeping the aspect ratio same. Black and white emblem is to be used in the front page of the thesis*

1. Should all new chapter start in odd page?

*Yes, all new chapters should start in odd page. Use Section break (Odd page) option in MS word. Layout🡪Breaks🡪Section break (Odd Page). Verify the pages are coming correctly in the print preview. This should be used after each chapter.*

1. Which is English format to be followed?

*English (UK)*

1. In the main body how should the intending be done?

*Except first paragraph of a section, all the other paragraphs should have intends. Use cntrl+tab for intending the second paragraph*

1. How to insert mirror page numbers and mirror chapter headings in each page?

*In header insert 3 text tabs, in that according to the odd or even page include the page number. Use different first page and unlink from the previous page for the first three pages of any chapter. Then use Quick parts🡪style reference🡪Heading 1. For new chapter double click footer🡪right click page number🡪continue from previous section. This will ensure continuous numbering.*

1. Should the thesis evaluation page written in pen or can be taken print out?

*Thesis evaluation page is to be included only in the final copy of the thesis. In that except date, others can be taken print out.*

1. Is the word “Thesis” and “doctor of Philosophy” in bold in the front page?

*Yes*

1. Is the guide name in the front-page full capital?

*No. Supervisor(s) name in the front page is to be given capitalise each word.*

1. Spacing between supervisor 1 and supervisor 2 name

*Normal line spacing*

1. Is there no chapter number for Reference, List of publications, etc?

*Chapter number is not there for Reference, List of publication etc.*

1. What is the font size to be used in Tables, Figures, equations etc.?

*The font size inside the table/figures/equation should not have much variation from the normal font size i.e, 11 point. Give 6 point spacing between a table and the normal body text. Use Microsoft equation editor or MathType for entering equations and don’t use the insert equation option in word which has a font Cambria Math.*

1. What is the format of the page number corresponding to the chapter heading in contents page?

*It is of 11 point size and bold.*

# References

[1] B. Aupetit, A Primer on Spectral Theory. New York: *Springer-Verlag*, 1991.

[2] Y. A. Abramovich, C. D. Aliprantis, and O. Burkinshaw, “Another characterization of the invariant subspace problem,” *Operator Theory in Function Spaces and Banach Lattices. The A.C. Zaanen Anniversary Volume, Operator Theory: Advances and Applications*, vol. 75, no. 1, pp. 15–31, 1995, birkhäuser Verlag.

[3] J. B. Conway, A Course in Functional Analysis, 2nd ed. New York: *Springer-Verlag*, 1990.

[4] J. I. Ljubiˇc and V. I. Macaev, “On operators with a separable spectrum,” *Amer. Math. Soc. Transl*. (2), vol. 47, pp. 89–129, 1965.

# Publications from the Thesis

**Journal Papers**

• H. Liu and B. He. VMbuddies: “Coordinating Live Migration of Multi-Tier Applications in Cloud Environments”. in *IEEE Transactions on Parallel and Distributed Systems,* 2014.

***Under Review***

• J. J. Dongarra, P. Luszczek, and A. Petitet. “The LINPACK benchmark: Past, present, and future.” *In Concurrency and Computation: Practice and Experience,* 2003.

**Conference Papers**

• J. J. Dongarra, P. Luszczek, and A. Petitet. “The LINPACK benchmark: Past, present, and future.” In Concurrency and Computation: Practice and Experience, 2003.

# Appendix A

## How to install

Windows OS

TeXLive package - full version

1. Download the TeXLive ISO (2.2GB) from

https://www.tug.org/texlive/

2. Download WinCDEmu (if you don’t have a virtual drive) from

http://wincdemu.sysprogs.org/download/

3. To install Windows CD Emulator follow the instructions at

http://wincdemu.sysprogs.org/tutorials/install/

4. Right click the iso and mount it using the WinCDEmu as shown in

http://wincdemu.sysprogs.org/tutorials/mount/

5. Open your virtual drive and run setup.pl