

# **GUIDELINES FOR THESIS PREPARATION**

INDIAN INSTITUTE OF TECHNOLOGY KANPUR

# GUIDELINES FOR THESIS PREPARATION

## 1. Introduction

### 1.1 Purpose

This document, herein after referred to as the Thesis Guide, lists the general and specific requirements governing thesis preparation including guidelines for structuring the contents. For style, structure and presentation of the thesis, students may refer to additional style manuals or reference guides (some of which are listed below) and to the published literature in their respective fields of study.

#### Style Manuals or Reference Guides

- i. Michaelson, H.B. *How to Write & Publish Engineering Papers and Reports*. 3<sup>rd</sup> ed. Phoenix: Oryx Press, 1990.
- ii. Turner, R.P. *Technical Report Writing*. 2<sup>nd</sup> ed. San Francisco: Rinehart Press, 1971.
- iii. Turk, C. and Krikman, J. *Effective writing: Improving Scientific, Technical and Business Communication*. 2<sup>nd</sup> ed. London: E & FN Spon, 1989.
- iv. Campbell, W.G., Ballou, S.V. and Slade, C. *Form and Style: Theses, Reports, Term Papers*. 4<sup>th</sup> ed. Boston: Houghton Mifflin Co., 1974.
- v. *MLA Style Manual and Guide to Scholarly Publishing*. 3<sup>rd</sup> ed. New York: Modern Language Association, 2008.
- vi. Sternberg, D. *How to Complete and Survive a Doctoral Dissertation*. New York: St. Martin's Press, 1981.
- vii. Day, R.A. and Gastel, B. *How to Write and Publish a Scientific Paper*. Westport: Greenwood Press, 2006.
- viii. Booth, W.C., Colomb, G.G. and Williams, J.M. *The Craft of Research*. Chicago: The University of Chicago Press, 2003.
- ix. *Publication Manual of the American Psychological Association*. 6<sup>th</sup> ed. Washington, DC: APA, 2009.

#### Thesis Submission

The thesis is to be submitted to the Dean of Academic Affairs in a soft copy (PDF). Besides various existing requirements for thesis submission such as submission of a list of examiners by the thesis supervisor, students and their thesis supervisors should ensure that the guidelines for thesis preparation and submission have been adhered to.

Before submission, the thesis is to be sent to the Thesis Processing Cell for **Similarity Check** and **Formatting Check**. The Thesis Processing Form issued by the Thesis Processing Cell, signed by the student and the thesis supervisor, has to be submitted at the time of thesis submission to be filed in the Student File maintained by the office of the Dean of Academic Affairs. For more information, see [www.iitk.ac.in/doaa/tpc](http://www.iitk.ac.in/doaa/tpc)

While submitting the thesis, every student is required to provide the Dean of Academic Affairs a signed declaration in the format given on page 13 of this document.

## **Thesis Archiving**

In case of PhD/MSR theses, a soft copy of the revised thesis is to be submitted prior to the Oral Examination along with the soft copy of the responses to the thesis examiners. In the revised version of the thesis, the revisions are to be highlighted in examiner-specific colours.

After the Oral Examination, the finally accepted version of the PhD/MSR/MTech/MDes/BT-MT thesis is to be submitted in a soft copy (without highlighting the revisions) to the DOAA office for its records, and to the library for digital archiving.

## **2. Specifications for the Thesis Format**

### **2.1 Preparation of Manuscript and Copies**

2.1.1 The thesis needs to be prepared using a standard text processing software.

2.1.2 Uniformity in font sizes, fonts, spacing, and margins has to be ensured.

2.1.3 Thesis should be free from typographical errors.

### **2.2 Size and Margins**

2.2.1 A4 is the recommended thesis page size.

2.2.2 The top, bottom and right side margins should be 25 mm, whereas the left side margin should be 35 mm for both textual and non-textual (e.g., figures, tables) pages.

2.2.3 Content should not extend beyond the bottom margin except for completing a footnote, last line of chapter/subdivision, or figure/table caption.

2.2.4 A sub-heading at the bottom of the page should have at least two full lines of content below it. If the sub-heading is too short to allow this, it should begin on the next page.

2.2.5 All tables and figures should conform to the same requirements as text. Color may be used for figures. If tables and figures are large, they may be reduced to the standard size (provided the reduced area is not less than 50% of the original) and /or folded just once to flush with the thesis margin (if the page size does not exceed 250x360 mm).

- 2.2.6 Students may choose to submit the thesis either in the standard size (as in 2.2.1) or in a book format that is roughly half of A4. If the book format is adopted for submission, it should be ensured that all textual and illustrative material is distinct and legible.

## **2.3 Page Numbering**

- 2.3.1 Beginning with the first page of the text in the thesis (chapter 1), all pages should be numbered consecutively and consistently in Arabic numerals through the appendices.
- 2.3.2 Page numbers prior to Chapter 1 should be in lower case Roman numerals. The title page is considered to be page i but the number is not printed.
- 2.3.3 All page numbers should be placed without punctuation in the upper right hand corner, 12mm from the top edge and with the last digit even with the right hand margin.

## **2.4 Multi-Volume Thesis**

A thesis may be in two or more volumes, if required. The volume separations come at the end(s) of major division(s). The preliminary pages prior to Chapter 1 are contained only in Volume I, except the title page.

## **2.5 Line Spacing**

The general text of the manuscript should be in double spacing (3 lines per inch). Long tables, quotations, footnotes, multi-line captions and bibliographic entries (references) should be in single spacing (6 lines per inch), with text size in 11 points.

## **2.6 Tables, Figures and Equations**

- 2.6.1 All tables (tabulated data) and figures (charts, graphs, maps, images, diagrams, etc.) should be prepared, wherever possible, on the same page used to type the text and conform to the specifications outlined earlier. They should be inserted as close to the textual reference as possible.
- 2.6.2 Tables, figures and equations should be numbered sequentially either throughout the thesis or chapter-wise using Arabic numerals. They are referred to in the body of the text capitalizing the first letter of the word and number, as for instance, Table 17, Figure 24, Equation (33), or Table 5.3, Figure 3.11, Equation (4.16), etc.
- 2.6.3 If tables and figures are of only half a page or less, they may appear on the same page as text but separated above and below by triple line spacing. Font size for text should be the same as for the general text.

2.6.4 Good quality figures must be drawn using standard software that provides vector rather than bit-map graphics. Figures must be scalable.

2.6.5 Images, Photographs etc. must be scanned in resolution exceeding 200dpi with 256 greyscales for the monochrome images and 24 bit per pixel for the color images.

### **3. Guidelines for Structuring the Contents**

#### **3.1. Sequence of Contents**

The following sequence for the thesis organization should be followed:

- |       |                    |   |
|-------|--------------------|---|
| (i)   | Preliminaries      | Title Page ) As per the format given<br>Certificate ) at the end of the Thesis<br>Declaration ) Guide<br>Abstract/Synopsis )<br>Acknowledgement and/ or Dedication (where included)<br>Table of Contents<br>List of Figures, Tables, Illustrations,<br>Symbols, etc (wherever applicable) |
| (ii)  | Text of Thesis     | Introduction<br>The body of the thesis, summary and conclusions   |
| (iii) | Reference Material | List of References, Bibliography (where included)   |
| (iv)  | Appendices         | Where included  |
| (v)   | Index              | Where included  |

All the headings are centered (without punctuation) 25mm down the top edge of the page. The subsequent type-setting begins four spaces below the heading.

#### **3.2 Preliminaries**

##### **3.2.1 Synopsis/Abstract**

3.2.1.1 An M Tech. thesis should contain an abstract not exceeding 300 words (about one page), and a Ph.D. thesis should contain an abstract/synopsis not exceeding 1000 words (about four pages) in double spacing.

3.2.1.2 Ph.D. students shall submit a copy of the synopsis/abstract for transmission to examiners.

3.2.1.3 A synopsis/abstract shall be prepared in double space with the heading "SYNOPSIS/ABSTRACT" in uppercase followed by certain preliminary information and the

text. For textual matter, refer to the suggested format which is placed at the end of the Thesis Guide.

3.2.1.4 Synopsis/Abstract should be complete by itself and contain no citations.

### 3.2.2 **Table of contents**

3.2.2.1 The table of contents lists all material that follows it. No preceding material is listed. Chapter titles, sections, first and second order sub-divisions, etc must be listed in it.

3.2.2.2 Tables, figures, nomenclature, if used in the thesis, are listed under separate headings.

## 3.3 **The Text of the Thesis**

### 3.3.1 **Introduction**

Introduction may be the first chapter or its first major division. In either case, it should contain a brief statement of the problem investigated. It should outline the scope, aim, general character of the research and the reasons for the student's interest in the problem.

### 3.3.2 **The body of Thesis**

This is the substance of the dissertation inclusive of all divisions, subdivisions, tables, figures, etc.

### 3.3.3 **Summary and conclusions**

If required, these are given as the last major division (chapter) of the text. A further and final sub-division titled "Scope for Further Work" may follow.

### 3.3.4 **Reference material**

The list of references should appear as a consolidated list with references listed either alphabetically or sequentially as they appear in the text of the thesis. If pertinent works have been consulted but not specifically cited, they should be listed as Bibliography or General References. Spacing and font size should be consistent inside a single reference, and there should be double spacing between two different references (see Section 2.5).

#### **Reference Format**

For referencing an article in a scientific journal the suggested reference format should contain the following information: title, authors, name of journal, volume nos, page nos and year.

For referencing an article published in a book, the suggested format should reference should contain, the title of the book, authors, editors, publisher, year, page number of the article in the book being referred to.

For referencing a thesis, it is required to specify the title of thesis, author, where thesis was submitted or awarded, and the year.

A few examples of formats of references are given below and student should be consistent in following the style.

### **Journals**

H.E. Exner, "Physical and Chemical Nature of Cemented Carbides," *International Metals Review*, 1979, v. 24, pp. 149-173.

G.E. Spriggs, "The Importance of Atmosphere Control in Hard Metal Production", *Powder Metallurgy*, 1970, v. 13, n. 26, pp. 369-393.

Paul, A.; Connolly, D.; Schulz, M.; Pryce, M. T.; Vos, J. G. Effect of Water during the Quantitation of Formate in Photocatalytic Studies on CO<sub>2</sub> Reduction in Dimethylformamide. *Inorg. Chem.* 2012, *51*, 1977– 1979, DOI: 10.1021/ic202121.

A. Kaczmarek, M. Shiga, and D. Marx, *J. Phys. Chem. A* **113**, 1985 (2009).

### **Conference Proceedings**

H.F. Fischmeister, "Development and Present Status of the Science and Technology of Hard Materials," *Science of Hard Materials*, R.K. Viswanadham, D.J. Rowcliffe, and J. Gurland (eds.), Plenum Press, New York, NY, USA, 1982, pp. 1-45.

W.H. Baek, M.H. Hong, S. Lee, and D.T. Chung, "A Study on the Shear Localization Behavior of Tungsten Heavy Alloy," *Tungsten and Refractory Metals 2*, A. Bose and R.J. Dowding (eds.), Metal Powder Industries Federation, Princeton, NJ, USA, 1995, pp. 463-471.

### **Books**

R.M. German, *Powder Injection Molding*, Metal Powder Industries Federation, Princeton, NJ, USA, 1990.

### **Books (Edited)**

H.J. Emeléus and A.G. Sharpe (eds.), *Advances in Inorganic Chemistry and Radiochemistry*, New York, Academic Press, 2001.

### **Book Chapters**

J. Almlöf and O. Gropen, "Relativistic Effects in Chemistry", In *Reviews in Computational Chemistry*, K.B. Lipkowitz and D.B. Boyd (eds.), New York, VCH, 1996, Vol. 8, pp 206–210.

### **Theses**

J.L. Johnson, *Densification, Microstructural Evolution, and Thermal Properties of Liquid Phase Sintered Composites*, Ph.D. Thesis, The Pennsylvania State University, University Park, PA, USA, 1994.

### **Technical Reports**

E.G. Zukas, P.S.Z. Rogers, and R.S. Rogers, "Experimental Evidence for Spheroid Growth Mechanisms in the Liquid Phase Sintered Tungsten Based Composites," *Informal Report: Los Alamos Scientific laboratory*, USA, 1976, pp. 1-35.

### **Patents**

V. Oenning and I. S. R. Clark, U. S. Patent No. 4988386, 1991.

### **Journals in Non-English Languages**

L. Weihong and T. Xiuren, "Tungsten Matrix in Cu-W Contact Materials by Impregnation Process," *Powder Metallurgy Technology*, 1988, v. 6, n. 8, pp. 1-4. (in Chinese).

### **Internet Sources**

International Union of Pure and Applied Chemistry Home Page. [http://www.iupac.org/dhtml\\_home.html](http://www.iupac.org/dhtml_home.html) (accessed April 24, 2005).

### **3.3.5 Appendix or Appendices**

3.3.5.1 Supplementary illustrative material, original data, and quotations too lengthy for inclusion in the text or which is not immediately essential to an understanding of the subject can be presented in Appendix or Appendices (as Appendix A , Appendix B, etc.)

3.3.5.2 Each appendix with its title should be listed separately in the table of contents. Likewise, tables and figures contained in the Appendices are to be included in the lists of tables and figures, respectively.

## **4. Concluding Remarks**

This Thesis Guide lists only the basic requirements for preparing the thesis. Over and above the aforementioned points, a thesis should be reader-friendly in both its appearance and presentation. Several aspects of thesis preparation, particularly style of writing and presentation, have not been discussed in great detail. The student should cull appropriate ideas from standard literature of his/her area of research, and adopt a uniform style and format throughout the thesis, such as in the structural divisions/subdivisions of the thesis, in the mode of citing references and footnotes in the text, in using dimensions, units and notations, and in preparing tables and figures, etc.



**Sample Formats for Certificate, Abstract/Synopsis, and Title Page**  
**ABSTRACT/SYNOPSIS**

Comments

Name of Student.....Roll no.....	)	Centered on top of page
	)	
Degree for which submitted .....	)	Department.....
Thesis Title .....	)	
.....	)	
Name(s) of Thesis Supervisor(s)	)	Single spacing
1. ....	)	
2. ....	)	
Month and year of thesis submission.....	)	Double spacing
[Text of Synopsis/abstract begins here]	)	

## CERTIFICATE

It is certified that the work contained in the thesis titled “.....,” by “.....(Name of the Student)” has been carried out under my/our supervision and that this work has not been submitted elsewhere for a degree\*

**Signature of the Supervisor(s)**  
**Name(s)**  
**Department(s)**  
**I.I.T. Kanpur**

Month, Year

\*Note: this statement is mandatory

## **DECLARATION**

This is to certify that the thesis titled .....

.....  
has been authored by me. It presents the research conducted by me under the supervision  
of.....

To the best of my knowledge, it is an original work, both in terms of research content and narrative, and has not been submitted elsewhere, in part or in full, for a degree. Further, due credit has been attributed to the relevant state-of-the-art and collaborations (if any) with appropriate citations and acknowledgements, in line with established norms and practices.

Signature

Name:.....

Programme:PhD/MTech/MDes

Department:.....

Indian Institute of Technology Kanpur  
Kanpur 208016

*Title of the Thesis*

---

*A Thesis Submitted*

In Partial Fulfillment of the Requirements

for the Degree Of

Name of the Student

*to the*

**DEPARTMENT OF -----**

**INDIAN INSTITUTE OF TECHNOLOGY KANPUR**

**Month, Year**

**Declaration (To be submitted at DOAA Office)**

I hereby declare that

1. The research work presented in the thesis titled

.....  
has been conducted by me under the guidance by my supervisor(s)

.....

2. The thesis has been formatted as per Institute guidelines.
3. The content of the thesis (text, illustration, data, plots, pictures etc.) is original and is the outcome of my research work. Any relevant material taken from the open literature has been referred and cited, as per established ethical norms and practices.
4. All collaborations and critiques that have contributed to giving the thesis its final shape is duly acknowledged and credited.
5. Care has been taken to give due credit to the state-of-the-art in the thesis research area.
6. I fully understand that in case the thesis is found to be unoriginal or plagiarized, the Institute reserves the right to withdraw the thesis from its archive and also revoke the associated degree conferred. Additionally, the Institute also reserves the right to apprise all concerned sections of society of the matter, for their information and necessary action (if any).

Signature

Name:.....

Programme: PhD/MTech/MDes

Roll No:.....

Department:.....

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