

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 field of study.

Style Manuals or Reference Guides

- i. Michaelson, H.B. *How to Write & Publish Engineering Papers and Reports*. 3rd ed. Phoenix: Oryx Press, 1990.
- ii. Turner, R.P. *Technical Report Writing*. 2nd ed. San Francisco: Rinehart Press, 1971.
- iii. Turk, C. and Krikman, J. *Effective writing: Improving Scientific, Technical and Business Communication*. 2nd ed. London: E & FN Spon, 1989.
- iv. Campbell, W.G., Ballou, S.V. and Slade, C. *Form and Style: Theses, Reports, Term Papers*. 4th ed. Boston: Houghton Mifflin Co., 1974.
- v. *MLA Style Manual and Guide to Scholarly Publishing*. 3rd 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*. 6th ed. Washington, DC: APA, 2009.

Thesis Submission

To have the thesis examined, the number of thesis copies to be submitted to the Dean of Academic Affairs should correspond to (a) the number of examiners (including thesis supervisors) for an M.Tech. degree student, and (b) the number of thesis supervisors **plus five copies** for a Ph.D. degree student.

Besides various existing requirements for thesis submission such as submission of a list of examiners, additional copies of synopsis/abstract, and payment of thesis examination fees (for Ph.D. only), students and their thesis supervisors should ensure that the guidelines have been adhered to. While submitting the thesis, every student is required to provide the Dean of Academic Affairs a signed checklist in the following format.

Statement of Thesis Preparation

1. Thesis title:
2. Degree for which the thesis is submitted:
3. Thesis Guide was referred to for preparing the thesis.
4. Specifications regarding thesis format have been closely followed.
5. The contents of the thesis have been organized based on the guidelines.
6. The thesis has been prepared without resorting to plagiarism.
7. All sources used have been cited appropriately.
8. The thesis has not been submitted elsewhere for a degree.

(Signature of the student)

Name:

Roll No.:

Department/IDP:

2. SPECIFICATIONS FOR THESIS FORMAT

2.1 Preparation of Manuscript and Copies

- 2.1.1 The thesis needs to be prepared using a standard text processing software and must be printed in black text (color for images, if necessary) using a laser printer or letter quality printer in standard typeface (Times New Roman or Sans Serif font).
- 2.1.2 The thesis must be printed or photocopied on both sides of white paper. All copies of thesis pages must be clear, sharp and even, with uniform size and uniformly spaced characters, lines and margins on every page of good quality white paper of 75 gsm or more.
- 2.1.3 Thesis should be free from typographical errors.

2.2 Size and Margins

- 2.2.1 A4 is the recommended thesis 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-head at the bottom of the page should have at least two full lines of content below it. If the sub-head 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 printed thesis copies 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. Students should also submit the thesis in soft form (PDF) for storage and archival.

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, 12 mm 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 separation should 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 paper 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 Line Drawings/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 greyscale for the monochrome images and 24 bit per pixel for the color images.

2.7 Binding

The student should submit the copies of the thesis in fully bound form (soft cover) for Ph.D. and a partially bound form (coiled wire binding, clamping, or filing) for M.Tech, respectively. Once the thesis is accepted, it is the student's responsibility to get it properly bound before depositing the required number of copies with the P.K. Kelkar Library and the Department concerned. The front cover of the bound copy should be the same as the title page of the thesis. The front cover should have printing on the side to include the author's name, abbreviated thesis title (optional), degree, department, and the year.

3. GUIDELINES FOR STRUCTURING CONTENTS

Sequence of Contents

The following sequence for the thesis organization should be followed:

- (i) Preliminaries Title Page) As per the format given
 Certificate) at the end of the Thesis
 Abstract/Synopsis) Guide
 Acknowledgement and/ or Dedication (where included)
 Table of Contents
 List of Figures, Tables, Illustrations,
 Symbols, etc (wherever applicable)
- (ii) Text of Thesis Introduction
 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.

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 also separately submit 6 copies of the synopsis/abstract for transmission to various examiners.
- 3.2.1.3 Further, every student (M. Tech. or Ph. D.) should submit 2 copies of brief abstract not exceeding 250 words (one page) for record keeping in the P.K. Kelkar Library.
- 3.2.1.4 A synopsis/abstract shall be printed 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.
- 3.2.1.5 Synopsis/Abstract should be self-complete and contain no citations for which the thesi has to be referred.

3.2.2 Table of contents

3.2.1.1 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 format should contain the following information: authors, title, name of journal, volume number, page numbers and year.

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

For referencing a thesis the suggested format should contain, author, the title of thesis, where thesis was submitted or awarded, year.

A few examples of formats of references are given below and the 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.

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.

Thesis

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 Language

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)

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 follow 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 submittedDepartment.....)

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 “Title of the Thesis,” 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 Supervisor(s)
Name(s)
Department(s)
I.I.T. Kanpur

Month, Year

*Note: this statement is mandatory

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