

8. Ph.D. Theses Format

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In this Chapter, we discuss the suggestion for Ph. D thesis writing in different formats. This short guideline the idea of a PhD thesis consisting of an alternative format for writing-up the results of three years' PhD research. It also studies compare and contrasts the conventional PhD thesis with the 'three papers' model, highlighting the main differences between them.

Introduction:

Thesis is not a book. Many emerging Ph. D researchers misguidedly believe that their PhD theses are essentially ready-to-go books. Basically Ph. D theses high quality presentation that imitates your depth study of broad subject related to the proposed title of thesis.

Types Of Theses:

Ph. D Researcher has the choice of writing their theses in the following two types of formats:

1. Traditional (Typical) Theses
2. Manuscript- Based Theses

A traditional (Typical) thesis which is a coherent document that provides a complete and systematic account of your research.

Specifications: Traditional theses contain the following components (as outlined in the graduate handbook:

<http://graduatestudies.concordia.ca/documents/publications/graduatehandbooks/thesispreparationguide.pdf>

Traditional Theses Contents:

- Title page
- Declarations (originality, copyright, thesis declaration form)
- Table of content
- List of figures and tables
- Acronyms
- Abstract
- Introduction
- Literature review
- Aims and Objectives
- Methodology (Method)
- 2 to 4 substantial results chapters (include discussion)
- General discussion
- Conclusion - implications and future out come

A **manuscript-based thesis** which is constructed around one or more related manuscripts. If your research has produced one or more manuscripts suitable for journal publication, your thesis may best be presented in manuscript-based format.

A manuscript-based thesis is constructed around one or more related manuscripts and can include additional results chapters.

You can be either the sole author or a senior co-author of the manuscripts. Important: Manuscripts must be included as published or as submitted. Partial papers or combinations of papers are not acceptable.

If you wish to change or re-write the material in the manuscript chapters, you must incorporate them into a traditional thesis format.

Manuscript – Based Theses Contents:

Introduction (WHY?):

The introductory chapter of a manuscript-based thesis is an over-arching, unifying introduction to the thesis as a whole. The introductory chapter should contain

- Literature review
- Context
- Theory
- Gaps

Objectives:

Methods (WHAT and HOW? In sufficient details):

Additional research results that have not been written up for publication in a refereed academic journal can be included as a separate chapter or chapters following the format of a more traditional thesis.

Please note that the inclusion of any additional result chapters may require adjustments to the contents of Chapter 1, such as the inclusion of a methods section.

Results (WHAT did you find?)

- Careful selection of figures & tables
- Add texture
- Style according to your discipline

Discussion (WHAT does it means?)

- Strengths & limitations

Final Chapter:

Conclusions And Suggestions For Further Work:

The concluding chapter forms a significant part of the thesis. It must not be merely a summary of the manuscript chapters.

References:

- Appendices (additional details, published papers & permission for copyright): Appendices should include materials that normally do not appear in refereed journal manuscripts, but which are sufficiently important to record in the thesis.

Examples: - Detailed methodologies that would enable a reader to repeat the studies - Details of experimental data not presented within the manuscript chapters - Diagrams of specialized equipment developed - Samples of questionnaires or survey

Specifications For The Thesis Format:

2.1 Preparation of Manuscript and Copies:

2.1.1 The thesis needs to be prepared using 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.

Abstract:

The abstract is a separate document from the manuscript; it is not bound with the thesis or dissertation. Abstracts must be printed on white, 8 ½ x 11-inch paper. No page numbers are printed on the abstract. One copy is required. Abstracts

must have the original signature(s) of the faculty advisor(s). The maximum length of the thesis abstract is 250 words. The maximum length of the dissertation abstract is 350 words, including the dissertation title. A sample is provided on page 13. Majors are listed on page 29-30.

Title Pages:

Title pages must be printed on white, 8 ½ x 11-inch paper. Committee member signatures on the title page must be originals. Spacing between text on the title page will vary according to the length of the title. Sample title pages, including one revised for electronic submission, are on pages 15-16. Format instructions are on page 14.

2.2 Size And Margins:

Font Size:

Use a standard font consistently throughout the manuscript. Font size should be 10 to 12 point for all text, including titles and headings. It is permissible to change point size in tables, figures, captions, footnotes, and appendix material. Retain the same font, where possible. When charts, graphs, or spreadsheets are “imported,” it is permissible to use alternate fonts. Italics are appropriate for book and journal titles, foreign terms, and scientific terminology. Boldface may be used within the text for emphasis and/or for headings and subheadings. Use both in moderation.

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 4 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:

Chapters may be identified with uppercase Roman numerals or Arabic numbers. Tables, figures, and equations should be numbered consecutively throughout the manuscript with Arabic numerals. Equation numbers should be placed to the right of the equation and contained within parentheses or brackets. Use uppercase letters to designate appendices

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

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 entire text should be single-spaced, one and one-half spaced, or double-spaced. Block quotations, footnotes, endnotes, table and figure captions, titles longer than one line, and individual reference entries may be single-spaced. Double spacing should follow chapter numbers, chapter titles and major section titles (Dedication, Acknowledgements, Table of Contents, List of Tables, List of Figures, List of Abbreviations, Appendices, and References). Double spacing should also occur before each first level and second-level heading, and before and after tables and figures embedded in the text. There should only be one blank space after headings. 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:

Figures commonly refer to photographs, images, maps, charts, graphs, and drawings. Tables generally list tabulated numerical data. These items should appear as close as possible to their first mention in the text. Tables and figures may be placed in appendices, if this is a departmental requirement or standard in the field. Tables and figures should be numbered with Arabic numerals, either consecutively or by chapter. Be consistent in the style used in the placement of tables and figure captions. Tables and figures may be embedded within the text or placed on a page alone. When placed on its own page, a figure or table may be centered on the page. When included with text, a table or figure should be set apart from the text. Tables and figures, including captions, may be oriented in

landscape. Table data and figure data must be kept together, if the information fits on one page.

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. 5

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 greyscale 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 Certificate) at the end of the Thesis Declaration) Guide Abstract/Synopsis) 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.

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).

Division:

Body of Manuscript: Departments will determine acceptable standards for organizing master's theses into chapters, sections, or parts. Usually, if a thesis has headings, a Table of Contents should be included. The dissertation must be divided into chapters. The use of parts, in addition to chapters, is acceptable.

Words and Sentences: Take care to divide words correctly. Do not divide words from one page to the next. Word processing software provides for "widow and orphan" protection. Utilize this feature to help in the proper division of sentences from one page to another. In general, a single line of text should not be left at the

bottom or top of a page. Blank space may be left at the bottom of a page, where necessary.

Headings and Subheadings: Use headings and subheadings to describe briefly the material in the section that follows. Be consistent with your choice of “levels” and refer to the instructions on spacing, above, for proper spacing between headings, subheadings, and text. First-level headings must be listed in the Table of Contents. Second level and subsequent subheadings may be included.

Acronyms / Abbreviations / Capitalization Abbreviations on the title page should appear as they do in the body of the thesis or dissertation. Examples: *Xenopus laevis*, Ca, Mg, Pb, Zn; TGF- β , p53. Capitalize only the first letter of words of importance, distinction, or emphasis in titles and headings. Do not alter the all-cap style used for acronyms (Example: AIDS) and organizational names (Example: IBM). Use the conventional style for Latin words (Examples: *in vitro*, *in vivo*, *in situ*). Genus and species should be italicized. Capitalize the first letter of the Genus, but not that of the Species name (Example: *Streptococcus aureus*).

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 no's, page no's 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.

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

2. G.E. Spriggs, “The Importance of Atmosphere Control in Hard Metal Production”, Powder Metallurgy, 1970, v. 13, n. 26, pp. 369-393.
3. Paul, A.; Connolly, D.; Schulz, M.; Pryce, M. T.; Vos, J. G. Effect of Water during the Quantitation of Format in Photocatalytic Studies on CO₂ Reduction in Dimethylformamide. Inorg. Chem. 2012, 51, 1977– 1979, DOI: 10.1021/ic202121.
4. 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.

Outline Of Theses:

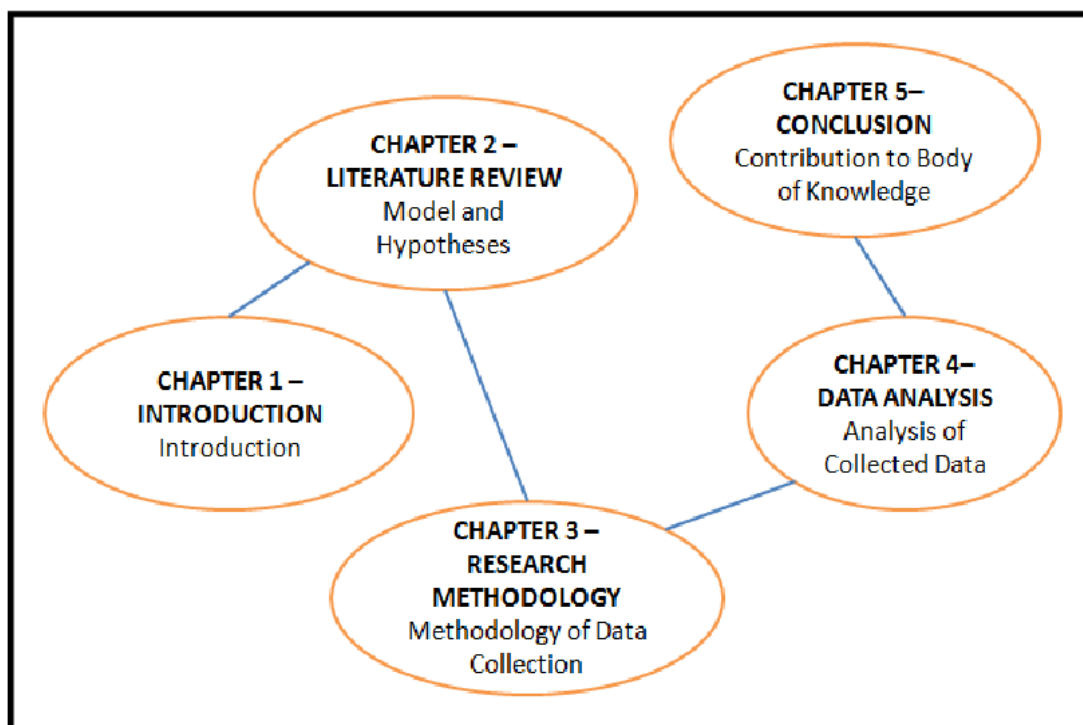


Figure 1.2: Model of the chapters of a thesis
Source: Adapted from Perry (2012, p. 5) for this research.