



# **GUIDELINES FOR PREPARATION AND SUBMISSION OF PhD THESIS**

**SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND  
TECHNOLOGY, TRIVANDRUM  
Thiruvananthapuram**

## **PREFACE**

The Thesis is a treatise that represents the fulfillment of the scholarly aspiration of the student. A good thesis should be clear and unambiguous and have a logical structure that should assist the reader's understanding of the argument being presented and not obscure it. In order to achieve this objective, the layout and physical appearance of the thesis should conform to a set pattern.

The purpose of this handbook is to outline the guidelines that a PhD thesis submitted to the Institute should adhere to. This manual provides an overview of the format for the preparation of the PhD dissertation and guidelines for the submission of the thesis. For details regarding the PhD program, the students are advised to consult the PhD manual available at the website: <http://www.sctimst.ac.in>

I wish to thank Dr. R. Renuka Nair, Dr. Chandra Prakash Sharma and Mr. Sundar Jayasingh for their valuable input in the preparation of the handbook. I encourage the students and the faculty members to give their valuable suggestions, which will help us in updating the handbook every year.

July 15, 2010

**K. Radhakrishnan**  
**Director**

## GENERAL INSTRUCTIONS

- On completion of the research work, the PhD *Thesis* is prepared according to the format provided.
- The students are advised to strictly adhere to the format.
- The *Thesis* submitted after August 1, 2010 and not conforming to the prescribed format will be sent back to the student for revision and resubmission, thereby causing unnecessary delays.
- *Four* copies of the *Synopsis* should be submitted *three months* prior to the submission of *Thesis*.
- The length of the *Thesis* should preferably be restricted to 250 printed pages.
- The students are advised to restrict the total number of References to less than 200.
- *Four* softbound copies of the *Thesis* have to be submitted for evaluation.
- If the *Thesis* is declared eligible for award of the PhD degree, *two* hardbound copies of the *Thesis* have to be submitted to the Academic Division within *one month* of the viva-voce examination, after incorporating the corrections suggested by the examiners.
- The Guide and Co-guides have to be given a final copy of the *Thesis*.
- A final copy of the *Thesis* should also be given to the Institute Library.

## **LAYOUT AND FORMAT**

One of the most important requisites in preparation of the *Thesis* is consistency of format and adherence to the specific instructions given below.

### ***Font***

The Thesis should be written in English. It must be typewritten on A4 size paper (21 cm x 29.7 cm) in a clear and legible font (e.g., Times New Roman 12 or Arial 10). As far as possible, use the same font for the entire thesis but, if necessary, different fonts may be used within Tables, Figures, and Appendices. The Thesis has to be printed single-sided. Double-spacing should be used in the Abstract and text of the Thesis. Single spacing should be used in long Tables, block quotations separated from the text, footnotes, and bibliographical entries. Paragraphs should be indented, or an empty line left between paragraphs.

Larger size type may be used for the title of the Thesis and for Chapter headings, as long as it is not larger than 18 point. Boldface type may also be used on the title page and for headings, as well as in the text for special symbols or for emphasis. Reduced type may be used within Tables, Figures, and Appendices, but it should be at least 9 point in size (partly because of microfilming requirements) and must be completely legible.

The Thesis should be free from grammatical, lexical and punctuation errors. In addition to the computer spellchecker, a thesis should be proof-read to check that errors do not remain that are not detected by the spellchecker. The thesis should consistently use either American or British spelling but should not alternate between the two. When using numbers in the text, if the first word of a sentence is a number, it should be written in words. Writers not fluent in English are encouraged to have their manuscript professionally edited before submission, to improve the English.

### ***Chapter and Page Layout***

Begin each Chapter on a new page. Do the same with each element of the front matter (list of Tables, Acknowledgments, etc.), the Reference section, and each Appendix. Avoid typing a heading near the bottom of a page unless there is room for at least two lines of text following the heading. The Chapters should begin on a new page, but

sections and subsections should not. A "display" page (a page that shows only the Chapter title) can be placed at the beginning of Chapters or Appendices.

Pages should be numbered at the bottom in the centre, using Arabic numerals (1, 2, 3) beginning with 1 on the first page of the Introduction and continuing consecutively to the end of the manuscript including References. The preliminary pages are numbered in lower-case Roman numerals, beginning with the declaration page.

### ***Margins***

A margin of at least 4.0 cm must be left at the top and left side of each page and a margin of at least 2.5 cm on the right and bottom. The last letter or character in the longest line on the page determines the margin.

### ***Captions and numbering (Tables and Figures)***

Each Table should carry a number and a title clearly describing the data presented. Similarly each Figure / Illustration should carry a number and caption that clearly describes the nature of data presented. The caption should be at the bottom of the Figure. Number them consecutively throughout, in the order in which they are placed in the text. The Figures, Graphs, Tables should be embedded in the text of the thesis, immediately after the first mention of it in the text, on the same page if there is room, or on the following page.

Captions and titles of Figures and Tables should appear on the same page as the material itself. Tables should be numbered consecutively with Arabic numerals throughout the thesis. Figures and Illustrations should also be numbered consecutively in the order of presentation. All Tables and Figures must be referred to in the text by numbers and not by a phrase such as "the following table".

Tables or Figures of peripheral importance to the text may be placed in an Appendix.

### ***Appropriate use of headings and subheadings***

Headings should be distinguished from the surrounding text by a larger font size, a different font, bolding, italics, or a combination of these. All headings of the same level

should use the same style, and headings at lower levels should be less prominent than those at higher levels. *Example:*

Chapter Title (Arial 14 point/ Times New Roman 16 point -Bold Small caps)

Heading for section (Arial 12 point/ Times New Roman 14 point - Bold Italic)

Heading for sub-section (Arial 10 point /Times New Roman 12 point - Bold)

Heading for part of subsection- (Arial 10 point/ Times New Roman 12 point- Bold Italic)

All headings should be left aligned, except chapter headings, which may be centered. The headings and subheadings can be numbered, if necessary.

## **FORMAT OF THESIS**

The manuscript consists of three main parts: The Preliminaries, The Text, and The Annexure. It is to be arranged in the following sequence:

### ***The Preliminaries***

Cover Page

Title Page

Declarations by Student

Certificate by Research Guide

Approval of Thesis

Acknowledgements

Table of Contents

List of Figures, Tables or Illustrations

List of Abbreviations (optional)

Synopsis

### ***The Text***

Introduction

Literature Review

Materials and Methods

Results

Discussion

Summary and Conclusion

Bibliography

### ***The Annexure***

## ***STRUCTURE OF THE PRELIMINARY PARTS***

### **OUTER COVER** (Lay out given in **Appendix-I**)

The outer cover should carry the following details:

The full title of the thesis

The candidate's name

Ph.D Thesis - Year

Institute's Emblem

Name of the Institute

Thiruvananthapuram

### **TITLE PAGE** (Lay out given in **Appendix II**)

The title page should provide the following information in the following order:

The full title of the thesis

The statement- "A thesis presented by"

Candidate's name, 'to'

Institute's name

The statement: "In partial fulfillment of the requirements for the award of Doctor of Philosophy"

The year of submission

Type the title of the thesis using capital letters throughout. If it occupies more than one line, double space between lines and arrange in inverted pyramid form. Express formulas, symbols, and abbreviations in words on the title page, even if the "shorthand" forms are conventional and widely accepted.

### **DECLARATION OF AUTHORSHIP** (Format given in **Appendix III**)

The student should make this declaration.

### **CERTIFICATE BY THE RESEARCH GUIDE** (Format given in **Appendix IV**)

The guide has to provide a certificate and if Co-guide is present, separate certificates have to be given by the Guide and Co-guide.

## **APPROVAL OF THESIS** (Format given in **Appendix V**)

To be signed by Guide, Co-guide and External examiner

## **ACKNOWLEDGEMENTS**

The acknowledgement of the thesis is written in gratitude to all those who were instrumental in bringing the thesis to fruition. The language used should be formal. Acknowledge those who have assisted technically (including materials, supplies), intellectually (assistance, advice) and financially (for example, funding agency institutional support, travel grants)

## **TABLE OF CONTENTS**

The thesis must have a table of contents page listing chapter headings, section headings and sub-headings as well as appendices and their corresponding page number, as illustrated below. Indent subheadings as shown below

### **TABLE OF CONTENTS**

	Page
Declaration by student	i
Certificate of guide	ii
Approval of thesis	iii
Acknowledgements	iv
List of Figures	
List of Tables	
Abbreviations	
Synopsis	xxx
Introduction Subheads ...	1
Literature Review Subheads ...	
Materials and Methods Subheads ...	
Results Subheads ...	
Discussion Subheads ...	
Summary and Conclusion	
Bibliography	
List of publication from thesis	
Curriculum vitae	
Appendices Title.... .....	A I A II



A separate list of Figures, Tables, or Illustrations should be included on a separate page immediately following the table of contents.

### **LIST OF FIGURES**

Figure No.	Caption	Page
------------	---------	------

### **LIST OF TABLES**

Table No.	Title	Page
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### **LIST OF ABBREVIATIONS:** (optional)

If a large number of abbreviations are used in the thesis, which may be unfamiliar to a reader, a list of abbreviations may be useful.

### **SYNOPSIS**

The synopsis is a summary of the contents of the thesis. The synopsis is submitted prior to the submission of the thesis and will carry a cover page (format given in Appendix-VI) It should be concise, and comprehensive, and should have the following details: The background and objectives, hypothesis, methods, major findings and significance/implication of the findings

The results can include quantitative data. Citations are generally not included in the synopsis. The synopsis should not include internal headings, diagrams or other illustrations. Like the text, it must be double-spaced.

The length of the Synopsis should not exceed 6 pages.

In the Thesis, the synopsis should be placed before the main text and when it forms part of the thesis, it should carry the heading 'SYNOPSIS.'

### ***THE TEXT OF THE THESIS***

The text of the thesis is usually divided into chapters with subheadings within the chapters to indicate the orderly progression of topics and their relation to each other.

All chapter headings should be typed consistently. When there are subheadings, each level of heading should be clearly distinguished typographically from the other levels,

and the variations should be selected so as to reflect in an obvious way the hierarchy of headings (that is, higher level headings should look more important). Always allow at least one extra line of space above subheadings, and preferably below as well.

**INTRODUCTION:** The thesis should normally begin with a general introduction presenting an overview of the purpose and significance of the study. The introduction should show why the topic selected is worth investigating. This will normally be done with reference to existing research, identifying areas that have not been explored, need to be explored further, or where new research findings justify a reconsideration of established knowledge. Having precisely defined the research problem, the introduction should propose a solution to this problem. This response should make explicit the objective of the research, not simply state an intention to explore or discuss. The study should be based on a well-defined hypothesis, which should be clearly stated. How the research makes an original contribution to the theoretical body of knowledge and also the study's practical significance should be mentioned. It is especially critical that the Introduction is well written. Without a clearly defined purpose and strong theoretical grounding, the thesis or dissertation is fundamentally flawed from the outset.

The final section of the Introduction should provide a brief overview of each of the main chapters that the reader will encounter.

**LITERATURE REVIEW:** It is called the Literature Review because the contents of this chapter are based on published material. The purpose of the literature review is to summarize, evaluate and compare the main developments and current debates in the field, which are specifically relevant to the subject of research embodied in the thesis. Literature review should also aim at and ways to address these issues with the present research program.

A critical review of the available solutions to the problem that was addressed and identifying the knowledge gaps in the current literature would establish benchmarks against which the contributions of the study can be assessed. Therefore, the most recent information relating to the field of study has to be presented.

**DESIGN OF STUDY:** The following information is meant to serve as a general suggestion and not as a rigid prescription. The supervisor and the student may decide how this part of the dissertation should be structured.

Although this section varies depending on method and analysis technique chosen, the chapter describes and justifies the methods chosen for the study and why this method was the most appropriate.

Following description of the research design, provide a detailed description of the procedure followed. Citations in this section should be limited to data sources and references of where to find more complete descriptions of procedure.

Description of the statistical analysis and tests performed are also to be given

**RESULTS:** The results are actual statements of observations, including statistics, tables and graphs. Mention negative results as well as positive. Use S.I. units throughout the thesis. Break up results into logical segments by using subheadings. Key results should be stated in clear sentences. Do not repeat in the text all the values given in tables. Do not present the same data as graph as well as table. Use one of the appropriate styles of presentation.

**DISCUSSION:** The purpose of this chapter is not just to reiterate the findings, but discuss the observations in relation to the theoretical body of knowledge on the topic. This chapter should also address the implication of the findings. Interpret results in terms of the background laid out in the introduction. Include the evidence or line of reasoning supporting each interpretation Break up the section into logical segments by using subheads

Outline the limitations of the study, and propose areas for future research.

**SUMMARY AND CONCLUSION:** Start with a few sentences that summarize the most important results and conclude by giving the strongest and most important statement that highlights the outcome of the study. The conclusion should provide answers or solutions to the questions or problems raised in the introduction. The argumentation of the thesis should be summarized briefly, and if appropriate, elaborate on how the research findings

and results will contribute to the field in general and what sort of broader implications these may have. Suggestions may be made for further research where appropriate, but this is not a requirement

**LIST OF REFERENCES:** All publications cited in the thesis should be presented in a list of references following the text. Students are advised to restrict the total number of references to 200.

The student is responsible for the accuracy of the References. References should follow the *Harvard-like format*. Citation of References in the text should be given by author's last name (no initials) followed by the year. When two or more citations are given, list them in chronological order. When there are two authors, include both names, separated by "&"; when there are three or more names, give only the first author followed by "et al." If there are two or more papers by the same author(s) in the same year, identify them by "a", "b", etc. (and be sure to include the identifying letters in the Reference List). All References cited in the text (including those included in figure legends and tables) should be listed in References.

Start the References on a separate page, and arrange citations in alphabetical order by the first author's last name; do not number the citations. List *all* the authors (do not use "et al." in the reference list). When there are two or more references to the same author(s), list them in chronological order.

For journal references, the names of authors (last name and initials) should be followed by the date (in parentheses), title of the article, journal name (in italics-use PubMed abbreviations), volume number (followed by a colon) and pages (first - last page numbers). Reference to electronic material should include author name(s), date, article title, and journal (as above); where volume and/or page numbers are not available, substitute Digital Object Identifier (DOI) number.

Illustrative examples of entries in a Bibliography or list of References are given below:

**Journal**

*Example:*

Gopinath B, Radhakrishnan K, Sarma PS, Jayachandran D, Alexander A (2000) A questionnaire survey about doctor-patient communication, compliance and locus of control among South Indian people with epilepsy. *Epilepsy Res* 39: 73-82.

### **Chapter in a Book**

Wenzel HJ, Schwartzkroin PA (2006) Morphologic approaches to the characterization of epilepsy models. In: Pitkanen A, Schwartzkroin PA, Moshe SL (eds) *Models of seizures and epilepsy*, Elsevier Academic Press, San Diego, pp. 629-652.

### **Book**

*Example:*

Pechenik JA (1987) *A short guide to writing about biology*. Harper Collins Publishers, New York.

### **Book in a series**

Bhattacharjee M (1998) *Notes of infinite permutation groups, Lecture notes in mathematics* no.1698, Springer, New York.

### **Encyclopedia articles**

Varley DH, Immelman RFM (1972) Libraries. *Standard Encyclopaedia of Southern Africa*, vol.6, p.618-619

### **Thesis/dissertation**

Smithers RHN (1997) *The mammals of Botswana*. DSc thesis. University of Pretoria.

### **Conference proceedings**

Bourassa S (1999) 'Effects of child care on young children', *Proceedings of the third annual meeting of the International Society for Child Psychology*, International Society for Child Psychology, Atlanta, Georgia, pp. 44-6.

### **Citations from Internet**

The following elements in sequence must be considered: Author (if known), Date of publication/last updated, Title of article or document on website Type of medium [Online], Available from (website), Access date in brackets

Harris P (2005) Reaching the top of the mountain. [Online]. Oxford University Press: Oxford. Available: <http://www.netLibrary.com/openbook/093456/html> [Accessed 8 January 2008]

Useful tips for referencing. [Online]. Available: <http://www.referencetips.org.za> [Accessed 5 November 2008].

Lawrence JJ (2005) Cholera epidemics in central Africa. *The Times*, 26 June 2005. [Online]. Available: <<http://thetimes.com>> [Accessed 27 June 2005].

**Patents**

Author(s) of patent – surname and initials Year of issue, *Title of patent- italicised*,  
Number of patent including country of issue  
Cookson AH (1985) *Particle trap for compressed gas insulated transmission systems*, US  
Patent 4554399.

***THE ANNEXURE******List of publications:***

List of publications obtained by the student from the PhD work should be included in the Thesis. Students are strongly encouraged to place the accepted versions of the manuscripts (maximum two), which were integral part of thesis work.

***Curriculum vitae (optional):***

Provide one page giving academic qualifications, academic achievements and list of publications.

***Appendices (optional):***

Appendices may include the formulas, diagrams, protocols, or any similar data that are not contained in the body of the thesis. The number can be given as A-1,A-2 and listed as such in the table of contents.

**ANNEXURE**

**Appendix I-** Layout of Outer cover

**TITLE OF THESIS**

(Capitals, bold and inverted pyramid form)

**NAME**

Ph.D. THESIS

Year

(Institute Emblem)

SREE CHITRA TIRUNAL INSTITUTE  
FOR  
MEDICAL SCIENCES AND TECHNOLOGY, TRIVANDRUM  
Thiruvananthapuram

**Appendix II** – Layout of title page

**TITLE OF THESIS**

(Capitals, bold and inverted pyramid form)

A THESIS PRESENTED BY

**(NAME)**

TO

THE SREE CHITRA TIRUNAL INSTITUTE FOR  
MEDICAL SCIENCES AND TECHNOLOGY, TRIVANDRUM  
Thiruvananthapuram

IN PARTIAL FULFILMENT OF THE REQUIREMENTS  
FOR THE AWARD OF  
**DOCTOR OF PHILOSOPHY**

YEAR



**Appendix III-Format for declaration by student**

**CERTIFICATE**

I..... hereby certify that I had personally carried out the work depicted in the thesis entitled, “.....”, except\*.....

No part of the thesis has been submitted for the award of any other degree or diploma prior to this date.

**Signature**

*Name of the Candidate*

*Date*

*(\* If external help was sought declare and acknowledge)*

**Appendix IV- Format for declaration by Guide:**

Name of the guide  
Division/Department

This is to certify that .....in the  
department/division of .....of this Institute has fulfilled  
the requirements prescribed for the Ph.D degree of the Sree Chitra Tirunal Institute for  
Medical Sciences and Technology, Trivandrum.

The thesis entitled, “.....” was carried out under my  
direct supervision. No part of the thesis was submitted for the award of any degree or  
diploma prior to this date.

\*Clearance was obtained from the Institutional Ethics Committee/ Institutional Animal  
Ethics for carrying out the study

Signature  
Date

*\* As and when applicable.  
If an external/ Coguide was present a similar declaration should be given*

**Appendix V** - Format for approval of thesis

The thesis entitled

.....

Submitted by

.....

for the degree of  
Doctor of Philosophy

of

SREE CHITRA TIRUNAL INSTITUTE  
FOR  
MEDICAL SCIENCES AND TECHNOLOGY, TRIVANDRUM  
Thiruvananthapuram

Is evaluated and approved by

.....  
Name of the guide.

.....  
(Name of thesis examiner

**Appendix VI - Cover page of synopsis**

**TITLE OF THESIS**  
(Capitals, bold, inverted pyramid form)

**SYNOPSIS**

by

**NAME**

for Ph.D. Degree  
of

**THE SREE CHITRA TIRUNAL INSTITUTE FOR  
MEDICAL SCIENCES AND TECHNOLOGY, TRIVANDRUM  
Thiruvananthapuram**

(The typed pages may be stapled and submitted 3 months prior to the submission of thesis. When synopsis forms part of the thesis the cover page need not be included)