

# Writing a New Mexico Tech thesis with LaTeX



John W. Shipman

2012-02-04 16:36

## Abstract

Instructions for writing a thesis or dissertation to conform to New Mexico Tech standards, using the LaTeX document preparation system.

This publication is available in Web form<sup>1</sup> and also as a PDF document<sup>2</sup>. Please forward any comments to **tcc-doc@nmt.edu**.

## Table of Contents

1. Introduction: Why LaTeX? .....	2
2. Resources for the writer .....	2
3. The LaTeX production cycle .....	3
3.1. Printing PDF files at the Tech Computer Center .....	3
4. Overall structure of the document .....	3
4.1. Limitations of the style .....	4
5. Declarations in the preamble .....	4
5.1. Selecting the type of report: <code>\thesis</code> , <code>\dissertation</code> , <code>\mastersreport</code> .....	5
5.2. Your name: <code>\author</code> .....	5
5.3. Overall title: <code>\title</code> .....	5
5.4. Naming your degree: <code>\degree</code> .....	5
5.5. Graduation date: <code>\graduationdate</code> .....	6
5.6. Typist credit: <code>\typist</code> .....	6
5.7. Chairperson of your committee: <code>\chair</code> .....	6
5.8. Number of signatures required: <code>\committeesize</code> .....	6
6. Front matter .....	7
6.1. The <code>dedication</code> environment .....	7
6.2. The <code>\titlepage</code> command .....	7
6.3. The <code>\epigraph</code> command .....	7
6.4. The <code>\frontispiece</code> command .....	8
6.5. The <code>abstract</code> environment .....	8
6.6. The <code>acknowledgments</code> environment .....	9
6.7. The <code>\tableofcontents</code> command .....	9
6.8. The <code>\listoftables</code> command .....	9
6.9. The <code>\listoffigures</code> command .....	9
6.10. The <code>\listofabbrs</code> command .....	9
6.11. The <code>\signaturepage</code> command .....	9
6.12. The <code>preface</code> environment .....	10
7. Organizing the body of your document .....	10

<sup>1</sup> <http://www.nmt.edu/tcc/help/pubs/nmtthesis/latex/>

<sup>2</sup> <http://www.nmt.edu/tcc/help/pubs/nmtthesis/latex/latex.pdf>

7.1. The <code>\chapter</code> command .....	10
7.2. The <code>\section</code> , <code>\subsection</code> , and <code>\subsubsection</code> commands .....	11
7.3. The <code>\appendix</code> command .....	12
7.4. The <code>References</code> and <code>Bibliography</code> environments .....	12
8. Including previously published chapters .....	14
8.1. The <code>chapterabstract</code> environment .....	14
8.2. The <code>chapterack</code> environment .....	14
8.3. The <code>chapterappendices</code> environment .....	15
8.4. The <code>chapterbibliography</code> environment .....	15
9. Template file .....	15

## 1. Introduction: Why LaTeX?

---

When it is time to write your thesis or dissertation, your choice of document technology depends on several factors.

- The final version must conform to the standards set forth in the *Thesis/Dissertation Manuscript Requirements*<sup>3</sup> published by the Graduate Office. See also the *New Mexico Tech thesis formatting checklist*<sup>4</sup>.
- The document must meet high standards for clarity, correct grammar, and attractive appearance. Figures must be cleanly reproduced and have readable captions.
- For most theses here, there will be significant mathematical content.
- An important goal of graduate work is to publish papers whenever possible. These papers are then included in the final document.

Given these considerations, the LaTeX document preparation system is a good choice. The New Mexico Tech Computer Center provides a LaTeX framework that helps you structure your thesis or dissertation and lets you concentrate on content and getting published.

### Note

For convenience, we will refer to the final document as “the thesis” in this publication, but the framework described here works equally well for doctoral dissertations or independent study reports.

Details of the implementation of this stylesheet are given in a separate document: *NMT Thesis Stylesheet: Internals*<sup>5</sup>.

## 2. Resources for the writer

---

You will need to learn the basics of the LaTeX system: how to break paragraphs, how to format tables and math, and so on. Here are some useful resources for this basic skill.

- The LaTeX Wikibook<sup>6</sup> is a free, comprehensive online resource.
- The Wikipedia article on LaTeX<sup>7</sup> describes the system in general and has links to numerous online resources, including free downloads of all the software for Microsoft, Macintosh, and Linux platforms.

<sup>3</sup> <http://www.nmt.edu/tcc/help/pubs/nmtthesis/>

<sup>4</sup> <http://www.nmt.edu/tcc/help/pubs/nmtthesis/checklist/>

<sup>5</sup> <http://www.nmt.edu/tcc/help/pubs/nmtthesis/ims/>

<sup>6</sup> <http://en.wikibooks.org/wiki/LaTeX>

<sup>7</sup> <http://en.wikipedia.org/wiki/LaTeX>

- Kopka, Helmut, and Patrick W. Daly. *Guide to LaTeX*, fourth edition. Addison-Wesley, 2004, ISBN 0-321-17385-6.

### 3. The LaTeX production cycle

---

These instructions are for using LaTeX at the New Mexico Tech Computer Center (TCC). You may prefer to do all your development elsewhere; however, for the final printed document, the TCC provides printers that can enforce the strict dimensional requirements of the Graduate Office.

Here is the procedure for developing a LaTeX thesis.

1. Download these two files into the same directory as your document.
  - `nmtthesis2009.sty`<sup>8</sup>
  - `mythesis.tex`<sup>9</sup>
2. Make a copy of the `mythesis.tex` file with some name of your choice, but the file's name must end in `.tex`. This will be the LaTeX file for your thesis.

There are a number of different tools for editing LaTeX files. All you need is a basic text editor such as Notepad in Windows or `emacs` or `vim` under MacOS or Linux. See the Wikipedia article mentioned in Section 2, “Resources for the writer” (p. 2) for pointers to a number of fancier systems for LaTeX writers, such as LyX.

3. Compile the LaTeX input file using the `pdflatex` program. This program converts your file directly to PDF format. Free reader programs exist on every platform for this format, such as Adobe Reader<sup>10</sup>. If `pdflatex` detects errors in your document, correct them and run `pdflatex` again.
4. Documents in PDF format are designed to be printed. However, you must be careful that your printing system does not change the dimensions of your document. See Section 3.1, “Printing PDF files at the Tech Computer Center” (p. 3).

#### 3.1. Printing PDF files at the Tech Computer Center

##### Warning

If you print your PDF document at the TCC, *do not* use the `\lpr` command. This command will change the size and position of the printing on the page.

Instead, use Adobe Reader, and be sure that these options are used:

- In the *Page Handling* section, be sure that the *Page Scaling* pull-down menu is set to **None**.
- Also in the *Page Handling* section, be sure that the *Auto Rotate and Centre* button is *not* set.

### 4. Overall structure of the document

---

It is good style to start your document with one or more comment lines (beginning with the “%” comment character) that identify what the document is and who wrote it.

Here is the overall structure of your `.tex` input file:

<sup>8</sup> <http://www.nmt.edu/tcc/help/pubs/nmtthesis/ims/nmtthesis2009.sty>

<sup>9</sup> <http://www.nmt.edu/tcc/help/pubs/nmtthesis/latex/mythesis.tex>

<sup>10</sup> <http://www.adobe.com/products/reader/>

```

% opening comments: who, what, when
% ...
%
\documentclass[12pt]{report}
\usepackage{nmtthesis2009}
  preamble declarations
\begin{document}
  document body
\end{document}

```

- The `\documentclass` line must be the first non-comment line of any LaTeX file. The “12pt” option selects the required 12-point type. The document class is `report`.
- The second line declares that you are using the NMT thesis template, the 2009 version. You must have a copy of the style file, `nmtthesis2009.sty`<sup>11</sup>, in the same directory as your document. Click on this link to download a copy of the file.
- The *preamble* is the part of your file between the `\documentclass` line and the `\begin{document}` line. These lines set up the overall structure of the document. See Section 5, “Declarations in the preamble” (p. 4).
- The *document body* is the portion between `\begin{document}` and `\end{document}`. This is the actual content of your thesis. See Section 7, “Organizing the body of your document” (p. 10).

## 4.1. Limitations of the style

These features will not work with this style file:

- Double-column output.
- Running heads.

## 5. Declarations in the preamble

---

The preamble, the part of your LaTeX file before the `\begin{document}` line, contains three types of content.

- Certain commands are required to be in the preamble. These commands set up options such as your name, the title, the degree, and so on.
- Some commands in the preamble are optional, such as your address.
- Depending on your specific needs, a number of other LaTeX commands may be included in the preamble. For example, if you are using packages such as the `graphicx` package that allows you to include images, the `\usepackage` commands that specify those packages must be located in the preamble.

The outline presented below lists the commands, in order, that the `nmtthesis2009` package expects to see in your preamble.

---

<sup>11</sup> <http://www.nmt.edu/tcc/help/pubs/nmtthesis/ims/nmtthesis2009.sty>

## 5.1. Selecting the type of report: `\thesis`, `\dissertation`, `\mastersreport`

Include one of these three commands in the preamble, depending on the overall document type you are preparing:

### `\thesis`

This is a master's thesis. This is the default type, so you may omit it.

### `\dissertation`

This is a doctoral dissertation.

### `\mastersreport`

This is the report for a master's degree with the independent study option.

## 5.2. Your name: `\author`

Use this command to display your name:

```
\author{Your Name Here}
```

The name must be spelled exactly the same as in your official transcript. Use upper and lower case letters, e.g., “Cabeza de Vaca”, not “CABEZA DE VACA”. Examples:

```
\author{Cabeza de Vaca}
\author{Slavoj \^{Z}i\^{z}ek}
```

## 5.3. Overall title: `\title`

Specify the document title, entirely in capital letters, with this command:

```
\title{YOUR TITLE HERE}
```

If the title does not fit entirely on one line, you must use an inverted pyramid form, with each line smaller than the previous line. Use a `\\` command to specify the position of line breaks after each line except the last.

Here is an example:

```
\title%
{% Begin title
  ADVENTURES IN THE UNKNOWN INTERIOR OF AMERICA\\
  WITH ESPECIAL REFERENCE TO THE USE OF\\
  BEANS AND CORN IN SUSTAINING\\
  CIVILIZATION
}% End title
```

## 5.4. Naming your degree: `\degree`

Use this command to specify the exact title of the degree you will receive, with standard English capitalization. Use the `\\` command if necessary to force line breaks.

```
\degree{degree name here}
```

Example:

```
\degree%  
{%  
  Doctor of Philosophy in Physics\  
  with Dissertation in Mathematical Physics  
}%
```

## 5.5. Graduation date: `\graduationdate`

Specify your date of graduation with this command.

```
\graduationdate{Month, year}
```

Example:

```
\graduationdate{March, 1883}
```

## 5.6. Typist credit: `\typist`

If you have had help in typing the thesis, you may include a command of this form to give them credit.

```
\typist{name}
```

Here's an example. Suppose that Rosemary Woods did most of the typing, but you get some credit as well:

```
\typist{Rosemary Woods and the author}
```

If you do not include a `\typist` command, the credit will be given to “the author.”

## 5.7. Chairperson of your committee: `\chair`

Use this command to display the name of the chairperson of your advisory committee. Omit titles such as “Dr.” or “Ph.D.”.

```
\chair{name}
```

Here is an examples:

```
\chair{Immanuel Kant}
```

## 5.8. Number of signatures required: `\committeesize`

Use a command of this form to specify the number of people on your committee. This command generates the correct number of places for signatures on your approval page.

```
\committeesize{number}
```

Example:

```
\committeesize{4}
```

## 6. Front matter

---

Here is the standard order for items before the first chapter of your thesis. This sequence begins immediately after the “`\begin{document}`” line.

- Section 6.1, “The `dedication` environment” (p. 7): optional.
- Section 6.2, “The `\titlepage` command” (p. 7): required.
- Section 6.3, “The `\epigraph` command” (p. 7): optional.
- Section 6.4, “The `\frontispiece` command” (p. 8): optional.
- Section 6.5, “The `abstract` environment” (p. 8): required.
- Section 6.6, “The `acknowledgments` environment” (p. 9): optional.
- Section 6.7, “The `\tableofcontents` command” (p. 9): required.
- Section 6.8, “The `\listoftables` command” (p. 9): required if you have any tables.
- Section 6.9, “The `\listoffigures` command” (p. 9): required if you have any figures.
- Section 6.10, “The `\listofabbrs` command” (p. 9): optional.
- Section 6.11, “The `\signaturepage` command” (p. 9): required.
- Section 6.12, “The `preface` environment” (p. 10): optional.

### 6.1. The `dedication` environment

If you have a dedication, use this environment. Use “`\\`” sequences to specify line breaks within the dedication.

```
\begin{dedication}
  ...
\end{dedication}
```

### 6.2. The `\titlepage` command

Use a `\titlepage` command following the dedication if there is one. If there is no dedication, this command follows immediately after the “`\begin{document}`” line.

This page will display, in order: the title from your `\title` command; your name, from the `\author` preamble command; the degree name, from the `\degree` preamble command; the name of the university; and the graduation date, whether from your `\graduationdate` preamble command or from the default date.

### 6.3. The `\epigraph` command

You may wish to display a relevant quote on an epigraph page. This page carries no page number and is not counted for page numbering. The contents are centered horizontally and vertically.

There are two forms for this command, depending on whether or not you wish to attribute the quote.

```
\epigraph{quotation}
\epigraph[attribution]{quotation}
```

The *quotation* may contain paragraph breaks or “\\” commands to force line breaks.

If an *attribution* is given, it is displayed below the quotation right-justified on the page. Use `\textit{...}` or `\textsl` to italicize book or journal titles.

Examples:

```
\epigraph%
{%
  The chief difficulty Alice found at first was in managing
  her flamingo.
}%
\epigraph[Carol Schaffer]{Common sense isn't.}
```

## 6.4. The `\frontispiece` command

Use this command to display a graphic with an optional title. There are two forms:

```
\frontispiece{graphic}
\frontispiece[title]{graphic}
```

The *graphic* is an image, typically using the `graphics` or `graphicx` package. If you would like to title your graphic, provide the title with the optional argument. Examples:

```
\frontispiece{\includegraphics{jabberwock}}%
\frontispiece[\textit{The Jabberwock}, John Tenniel]%
{\includegraphics{jabberwock}}%
```

## 6.5. The `abstract` environment

The Graduate Office requires an abstract, including at the end a set of two to six keywords or key phrases. Enclose your abstract in this environment, and after the text, use a `\keywords` command containing your keywords or key phrases.

```
\begin{abstract}
  ...text of your abstract...

  \keywords{keyword1, keyword2, key phrase3, ...}
\end{abstract}
```

The abstract page or pages will not carry a page number and will not count in the page numbering scheme. Here is a brief example:

```
\begin{abstract}
  Field study of migrating warblers shows that out-of-range
  migrants fall into two classes: disoriented birds, who are
  merely lost; and misoriented birds, who follow a specific
  route, but the route does not lead to their breeding grounds.

  \keywords{Pataphysics; cromulence; equations of state.}
\end{abstract}
```

## 6.6. The `\acknowledgments` environment

Enclose your acknowledgments in this environment:

```
\begin{acknowledgments}
...
\end{acknowledgments}
```

Any paragraphs you include will be displayed on a separate page. An additional paragraph will be included giving production credit to you, and to your typist if you defined one with a `\typist` command, followed by credits to the TeX and LaTeX documentation systems and the author of the local stylesheet.

If provided, this page will be numbered with lowercase Roman numerals, starting with “ii”.

## 6.7. The `\tableofcontents` command

Use a `\tableofcontents` command at this point in the document to generate the table of contents automatically. This page is numbered with lowercase Roman numerals with the rest of the front matter.

## 6.8. The `\listoftables` command

If you have any tables in your thesis, use a `\listoftables` command next. This will automatically generate a List of Tables. This page is numbered with lowercase Roman numerals with the rest of the front matter.

## 6.9. The `\listoffigures` command

If you have any figures in your thesis, use a `\listoftables` command next. This will display a List of Figures.

## 6.10. The `\listofabbrs` command

In former years, some theses include a “List of Acronyms,” displaying any abbreviations used in the thesis. This page is numbered with lowercase Roman numerals with the rest of the front matter.

However, in the strict sense, an acronym must be pronounceable, such as RADAR. Hence, if you have such a feature in your thesis, use the command `\listofabbrs` to produce a “List of Abbreviations” at this point in your thesis.

Unlike the table of contents and the lists of figures and tables, the content of this section is not generated automatically. Create a file named `abbrs.tex`, containing your table of abbreviations as a regular LaTeX table. Use a `tabular` environment with two columns: the abbreviations in the first column, and the definitions as paragraphs in the second column.

## 6.11. The `\signaturepage` command

Following the table of contents and lists of figures, tables, and abbreviations if any, use a `\signaturepage` command to generate the page where the members of your committee will sign the final thesis. This page does not count for page numbering, and displays no page number.

This page will contain, in order:

- The text “This dissertation is accepted on behalf of the faculty of the Institute by the following committee:”
- A signature line for your chair or co-chairs, displaying below it the names given in your `\chair` or `\cochairs` command in the preamble.
- Additional signature lines for the balance of your committee. The total number of signature lines depends on whether you used `\chair` or `\cochairs` commands in the preamble, and on the value of the `\committeesize` preamble command.

For example, if you used a `\chair` command and `\committeesize{4}`, there will be three additional signature lines after the one for your chair.

For another example, if you have co-chairs and used `\committeesize{4}`, there will be three signature lines. Both co-chairs sign on the first line and the other two committee members on the second and third.

- At the bottom of the page, another signature line for you to sign and date the thesis.

## 6.12. The preface environment

If you would like to provide a preface, enclose it in this environment:

```
\begin{preface}
...
\end{preface}
```

Content on this page or pages will be numbered with lowercase Roman numerals like the rest of the front matter.

## 7. Organizing the body of your document

---

Here is the general layout of your thesis, after the front matter, in the section with Arabic page numbers.

- The major divisions are chapters. You may also have one or more appendices, which are at the same level as chapters. See Section 7.1, “The `\chapter` command” (p. 10) and Section 7.3, “The `\appendix` command” (p. 12).

You can subdivide chapters and appendices using the commands described in Section 7.2, “The `\section`, `\subsection`, and `\subsubsection` commands” (p. 11).

- Last in your thesis comes the literature citations; see Section 7.4, “The References and Bibliography environments” (p. 12).

### 7.1. The `\chapter` command

To begin a new chapter, use a command of one of these forms:

```
\chapter{CHAPTER TITLE}
\chapter[SHORT TITLE]{CHAPTER TITLE}
```

Use all capital letters in the CHAPTER TITLE. If it is necessary to break lines, use “`\\`” commands between lines.

If you use the first form, the CHAPTER TITLE will appear in the table of contents. If you would like the title in the table of contents to be shorter than the full title, use the second form, specifying the SHORT TITLE as the optional first argument.

Examples:

```
\chapter{PREPARATION OF DRIED CORN USING A METATE, WITH A  
DISCOURSE ON THE GEOLOGY OF METATES}  
\chapter%  
[PREPARATION OF DRIED CORN]%  
{%  
PREPARATION OF DRIED CORN USING A METATE, WITH A  
DISCOURSE ON THE GEOLOGY OF METATES%  
}%
```

The Graduate Office allows you to have two special, unnumbered chapters. You may have a chapter entitled INTRODUCTION before the numbered chapters. You may also have a CONCLUSION chapter after the numbered chapters. In this case, use the `\chapter*` form of the command. Here is an example:

```
\chapter*{INTRODUCTION}  
...  
\chapter{TRAINS}  
...  
\chapter{BOATS}  
...  
\chapter{PLANES}  
...  
\chapter*{CONCLUSION}  
...
```

In the above example, the TRAINS chapter would be numbered 1, the PLANES chapter would be numbered 3, and the INTRODUCTION and CONCLUSION chapters would not be numbered.

## 7.2. The `\section`, `\subsection`, and `\subsubsection` commands

The first level of division within chapters is the section. The two forms are similar to the two forms of the `\chapter` command:

```
\section{SECTION TITLE}  
\section[SHORT TITLE]{SECTION TITLE}
```

If you use the first form, the SECTION TITLE will appear in the table of contents. With the second form, the SECTION TITLE appears at the beginning of the section, but the SHORT TITLE appears in the table of contents.

You may subdivide sections two levels further with `\subsection` and `\subsubsection` commands. These commands have the same optional and required arguments.

The way you capitalize section, subsection, and subsection titles is arbitrary, but be consistent throughout the thesis.

Examples:

```
\section{MAGNETOHYDRODYNAMICS OF METEOR BREAKUP}  
\section{Magnetohydrodynamics of Meteor Breakup}  
\section{Magnetohydrodynamics of meteor breakup}
```

```
\subsection[Ethical Considerations]{Ethical Considerations of  
Experimentation With Live Rocks}
```

### 7.3. The `\appendix` command

If your thesis has appendices, place this command before the first or only appendix:

```
\appendix
```

After that point, each `\chapter` will be numbered with an uppercase letter, e.g., Appendix A, Appendix B, and so on. Sections will display section numbers that start with the appendix letter: for example, sections of Appendix A will be numbered A.1, A.2, ....

For an appendix that appears as part of a separately published chapter, see Section 8.3, “The `chapterappendices` environment” (p. 15).

### 7.4. The References and Bibliography environments

In most cases, you will use a `{References}` environment to enclose the list of literature citations used in your thesis. However, if you would like to include useful works that you have not actually cited, you should use a `{Bibliography}` environment instead.

There are two different ways to cite references:

- *Numbered* citation style: uses sequential numbers in square brackets, e.g., “[23]”.

For this style, use `\cite` to cite a reference in the body of the text. To produce the list of references, use this general form of the environment, assuming that you don't have more than 99 references:

```
\begin{References}[99]  
...  
\end{References}
```

Use argument [9] if you have 9 or fewer references, or [999] if you have fewer than a thousand references.

- *Author-year* citation style: uses the author's name, the year of publication, and optionally suffix letters to distinguish different works by the same author in the same year. Examples: “[Knuth, 1986]”; “[Statler, 2004c]”. Use this general form:

```
\begin{References}  
...  
\end{References}
```

Citations in the body of the text can use these forms:

**`\cite{key}`**

Produces a citation of the form “Author [Year]”.

**`\citep{key}`**

Produces a citation of the form “[Author, Year]”.

## Warning

When you import a bibliography package such as `natbib` or `apalike`, be sure that the `\usepackage` command for that package comes *before* the `\usepackage{nmtthesis2009}`. Otherwise, your “REFERENCES” page will be incorrectly entitled “BIBLIOGRAPHY” and the entries will be erroneously double-spaced.

If you don't have a specific bibliography package in mind, this one is a reasonable default choice:

```
\usepackage{apalike}
```

### 7.4.1. Using BibTeX

If you are using BibTeX to extract the references from one or more bibliographic databases, use these commands inside the environment:

```
\begin{References}
  \bibliography{file1, file2, ...}
  \bibliographystyle{style}
\end{References}
```

The arguments *file1*, *file2*, ... to the `\bibliography` command are the names of your bibliographic databases, separated by commas.

The *style* argument to the `\bibliographystyle` command specifies how you want to format your references.

Here is an example. Suppose you are writing an article on geopataphysics, and you have two bibliographic database files named `georefs.bib` and `patarefs.bib`, and you are using the American Psychology Association style.

```
\begin{References}
  \bibliography{georefs, patarefs}
  \bibliographystyle{apalike}
\end{References}
```

Be sure to use the correct workflow for LaTeX documents using BibTeX: process the document once through `pdflatex`, then once through `bibtex`, and then twice more through `pdflatex`, to be sure the references are correctly linked to the text.

If you want to include works defined in the bibliography that you have not cited, place this command somewhere in the body of your text, and all the works will be displayed in the bibliography:

```
\nocite{*}
```

## Warning

You must have at least one `\cite` or `\citep` in the body of the text to produce a `{References}` section, because LaTeX will include only the references from your `.bib` file that you actually cite. If you don't cite any references, the `\bibliography` command will produce this error message:

```
LaTeX Error: Something's wrong--perhaps a missing \item.
```

### 7.4.2. Including references directly

An alternative to BibTeX is to place your reference entries directly in the document. Here is the general form:

```
\begin{References}
  \begin{thebibliography}
    \bibitem ...
    \bibitem ...
    ...
  \end{thebibliography}
\end{References}
```

In the text that follows each `\bibitem` command, any additional formatting must be done with explicit commands. For example, if you prefer to italicize a journal title, you must enclose it in a `\textit{...}` or similar command.

## 8. Including previously published chapters

---

An important goal of your graduate work is to try to get papers published. Here is an idealized procedure.

- Write your paper as a LaTeX `article`. Divide it into sections with `\section`, and include appendices and bibliography.
- Migrate that paper into the larger body of your thesis as a `chapter`.

If the chapter has an abstract, move it into a `chapterabstract` environment. See Section 8.1, “The `chapterabstract` environment” (p. 14).

If the chapter has an acknowledgement, move it to a `chapterack` environment. See Section 8.2, “The `chapterack` environment” (p. 14).

If the chapter has appendices, enclose them in a `chapterappendices` environment. Begin each appendix with a `\section` command. See Section 8.3, “The `chapterappendices` environment” (p. 15).

For the chapter-level bibliography, use the `chapterbibliography` environment. See Section 8.4, “The `chapterbibliography` environment” (p. 15).

### 8.1. The `chapterabstract` environment

To produce an abstract for just one chapter, include the content between these commands:

```
\begin{chapterabstract}
...
\end{chapterabstract}
```

### 8.2. The `chapterack` environment

To include an acknowledgments section within a chapter, include its content between these commands:

```
\begin{chapterack}
...
\end{chapterack}
```

### 8.3. The chapterappendices environment

If your chapter has one or more appendices, enclose them in a `chapterappendices` environment. Begin each appendix with a `\section` command.

```
\begin{chapterappendices}
  \section{first appendix title}
  ...
  \section{second appendix title}
  ...
\end{chapterappendices}
```

### 8.4. The chapterbibliography environment

To produce a separate bibliography within a chapter, use this package:

```
\usepackage{chapterbib}
```

At the point in your document where you want the chapter bibliography to appear, use this command if you are using the author-year citation style:

```
\begin{chapterbibliography}
...
\end{chapterbibliography}
```

If you prefer the numbered citation style, append an optional argument like this (assuming you have fewer than 99 references):

```
\begin{chapterbibliography}[99]
...
\end{chapterbibliography}
```

## 9. Template file

Here is a file you can copy and customize to build your thesis. You can also upload this file from online<sup>12</sup>.

- Replace items such as “Your Name Here” with your own content.
- In this file, optional features are commented out using four percent signs (%%%). If, for example, you want to include a dedication, just remove the percent signs from the `\begin{dedication}` and `\end{dedication}` lines, and add your dedications between those lines.

mythesis.tex

```
\documentclass[12pt]{report}
%=====
% Preamble declarations
%-----
% For instructions regarding the Graduate Office style, see:
%   http://www.nmt.edu/tcc/help/pubs/nmtthesis/
% For instructions regarding the nmtthesis2009.sty package, see:
%   http://www.nmt.edu/tcc/help/pubs/nmtthesis/latex/
%-----
```

<sup>12</sup> <http://www.nmt.edu/tcc/help/pubs/nmtthesis/latex/mythesis.tex>

```

% Place \usepackage commands for other modules here
%%%\usepackage{...}
\usepackage{natbib}% Example bibliographic style
%
% Use the NMT 2009 thesis style
%
\usepackage{nmtthesis2009}
%
% Select the type of publication, one of these three.
%
\thesis
%%%\dissertation
%%%\mastersreport
%
% General options
%
\author{Your Name Here}
\title{PLACE THE TITLE OF YOUR THESIS HERE, AND USE\
  COMMANDS TO BREAK LINES}
\degree{Master of Science in Physics\
  with Specialty in Instrumentation}
%
% If you leave the following line commented, the date will be
% the next available month and year of graduation ceremonies
%
%%%\graduationdate{December, 1889}
%
% If you would like to give credit to a typist, uncomment this
% line and enter the typist's name
%
%%%\typist{Rose Mary Woods and the author}
%
% Name your chairperson here. Do not use titles such as Dr. or Ph.D.
%
\chair{Albert Einstein}
%
% Number of people on your committee include chair(s)
%
\committeesize{6}
%=====
\begin{document}
%
% Begin front matter
%
%-----
%%%\begin{dedication}
%%%\
%%%\end{dedication}
%-----
%
% Produce the title page
%
\titlepage

```

```

%-----
%%%\epigraph[who said it]{what they said}
%-----
%%%\frontispiece[title of the graphic]{some graphic}
%-----
%
% An abstract is required. For suggestions on its content, see:
%   http://www.aapg.org/bulletin/abstract_scrutiny.pdf
% After your abstract, provide two to six keywords, or key
% phrases of up to three words, to assist librarians in
% indexing your work.
%
\begin{abstract}

\keywords{KEYWORD1; KEYWORD2; KEY PHRASE 3; ...}
\end{abstract}
%-----
%%%\begin{acknowledgments}
%%%\end{acknowledgments}
%-----
\tableofcontents
%
% If you have no tables, comment out \listoftables.
% If you have no figures, comment out \listoffigures.
% If you provide a List of Abbreviations, create a file
%   'abbrs.tex' containing the abbreviations table, and
%   uncomment \listofabbrs.
%
\listoftables
\listoffigures
%%%\listofabbrs
%-----
\signaturepage
%-----
%%%\begin{preface}
%%%\end{preface}
%=====
% Body of the document. Use one of these commands to start each
% chapter:
%   \chapter{FIRST CHAPTER TITLE}
%   \chapter[FIRST SHORT TITLE]{FULL LENGTH CHAPTER TITLE}
% If you have appendices, use these commands:
%   \appendix
%   \chapter{FIRST APPENDIX TITLE}
%   ...
%   \chapter{SECOND APPENDIX TITLE}
%   ...
%-----
\chapter{FIRST CHAPTER TITLE}

```

```

%=====
% References section. Uncomment one of the next two commands,
% depending on whether you cite references by number, or by
% author and year.
%
% For numbered citations:
%
% %%%\begin{References}[99]
%
% For citations by author and year:
%
%\begin{References}
%
% Inside the References environment, use these lines if you are
% using BibTeX. Replace 'apalike' with the name of your style
% if you are not using APA-like citations. Replace FILE1, FILE2,
% with the name(s) of your BibTeX database(s).
%
%\bibliographystyle{apalike}
%\bibliography{FILE1, FILE2, ...}
%
% If you are not using BibTeX, comment out the two lines above,
% and insert your references like this:
%
% %%%\begin{thebibliography}
% %%% \bibitem ...
% %%%   ...
% %%%\end{thebibliography}
%\end{References}
\end{document}

```