# The NDdiss $2\varepsilon$ class\*

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# 2013/04/16

#### Abstract

This NDdiss2 $\varepsilon$  class is based on the standard LaTeX  $2\varepsilon$  book class and is an extensive rewrite of the earlier NDthesis class file, incorporating changes for LaTeX  $2\varepsilon$  and pdfLaTeX as well as many other improvements. This class conforms with the requirements of the Graduate School guidelines as of Spring 2013 for the layout of the Ph.D. dissertations and Master's theses. In reading this documentation you will find that we assume that the reader has working knowledge of LaTeX  $2\varepsilon$ .

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<sup>\*</sup>Version 3.2013, dated 2013/04/16.

 $<sup>^\</sup>dagger Inspiration$  from an earlier  $\mathsf{NDThesis}$  class by D. A. Peterson; Updated Spring 2013 by Megan Patnott.

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# 1 Introduction

This document describes the LATEX  $2_{\varepsilon}$  document class NDdiss $2_{\varepsilon}$ , suitable<sup>1</sup> for producing dissertations and theses according to the Spring 2013 guidelines of the Graduate School at the University of Notre Dame. The latest version of this class and related documentation should be available at http://www.gsu.nd.edu or at http://graduateschool.nd.edu.

#### 1.1 Disclaimer

It could be thought of as suspicious if we begin with a disclaimer, but it is important for you to keep in mind that only you are responsible for the correct formatting of your dissertation/thesis even though use of this class simplifies that task considerably. There are certain formatting things which need to be done manually and are described later in Section 5. As such, this class and its associated documentation must not be assumed to be a replacement of the formatting guide from the Graduate School and this or dteditor@nd.edu should be consulted, in case of doubt. The Graduate School also supplies an example in their Microsoft Word materials, which is more likely to be up to date than either the LATEX materials or the official formatting guide. As of Spring 2013, the official formatting guide is out dated.

In short, no one but you (the user) accepts any responsibility for works that do not get approved by the Graduate School. Use of the  $NDdiss2_{\varepsilon}$  class file implicitly states acceptance of this policy. Having said that, a document produced by using this class (as described in the following sections) has a pretty good likelihood of being accepted as it is.

#### 1.2 Dependencies and Limitations

This classfile depends on many other packages to be present in either the TEXMF tree (system or local) or the LATEX search path. This is defined by shell variable

<sup>&</sup>lt;sup>1</sup>In Sameer's opinion, but with no guarantee that you or other users will agree. Sameer shall not be liable for any consequence, good or bad, of anyone's use of this software.

\$TEXINPUTS, which is probably only helpful to you if you are a Linux user. All of the required packages are available through MiKTeX and TeXLive, and can be downloaded in the usual fashion through those programs. A list of the essential packages is mentioned in section 3.

Although Megan has tested it with LaTeX [2009/09/24], it should be backwards compatible with LaTeX [1995/12/01] and higher as well. It is not possible for us to list the version of each package used within the class file and you might get errors if the package in your TEXMF tree is outdated. We do note that the 2013 update makes use of an upate made to the hyperref and natbib packages in about 2010. If the version of hyperref and natbib in your TEXMF tree is older than this, you will get many errors. Depending on your system, it may be possible to update only this package or you may have to update everything.

The classfile is limited in the sense that it will produce an acceptable document with the packages that we have tried and included by default. There are numerous packages you may want to use for your work, but they may have to be modified accordingly. Things lacking include support for the subfigure and subcaption package and proper formatting of the captions in such an environment. Formatting of the captions could be much easier with the caption<sup>2</sup> in general, and is a thing-to-do for future versions. Permitting use of the subfigure and subcaption packages would also be a good thing to do if an update is ever made for reaosns other than resolving conflicts caused by changing Graduate School regulations. If you want to use a subfigure environment and don't need the caption capabilities of the subcaption package, adding the following code to your preamble may allow you to do this and still have your captions formatted according to the Graduate School's rules.

```
\usepackage{subcaption}
\makeatletter
\renewcommand\LT@makecaption[3]{%
  \LT@mcol\LT@cols c{\hbox to\z@{\hss\parbox[t]\LTcapwidth{%} \vskip\abovetableskip%
  \centering\normalspacing
  #1{#2 }\\[\single@skip]
  {#3}\par
  \endgraf\vskip\belowtableskip}%
  \hss}}}
\makeatother
```

# 2 Usage

The NDdiss2 $\varepsilon$  document class can be used only with LaTeX  $2\varepsilon$  native mode or later, by typing \documentclass[ $\langle options \rangle$ ] {nddiss2e} at the beginning of your LaTeX source file. The available options for the use of the class are discussed in section 2.1 below. These have been limited to a small number in order to obtain documents

<sup>&</sup>lt;sup>2</sup>caption package by Axel Sommerfeldt v3.0b[2004/05/16] and higher

with similar formatting under  $\LaTeX$  2 $\varepsilon$  using this class, although the NDdiss2 $\varepsilon$  class is based on the book class, which has many other options.

## 2.1 Options

By default, all documents produced using this class are formatted in letterpaper size and onesided, doublespaced mode, as per the requirements of the Graduate School. If you wish to override these restrictions, appropriate changes to the class file would be needed. In theory, the class file's specifications should override your system's defaults. If, however, you are getting A4 paper, try adding \pdfpagewidth{8.5in} and \pdfpageheight{11in} immediately after the \documentclass call in your file.

The most important of the options is draft, review or final. Exactly one of these *must* be used, otherwise you will surely get errors.

draft

Using the draft option enables the draft mode of the book class, thus making the processing of the document faster. The most visible change that results from using this option is that only the placement boxes of included figures are displayed. An appropriate header is included to indicate that the prepared document is a draft document. The purpose of the draft option is to obtain a fast and preliminary document showing the labels for citations, tables, figures etc. and a black solid rule highlighting the horizontal overflows. Such a document would be the one you would prepare for revising your text during writing stages. The NDdiss2 $\varepsilon$ class checks for this option if you try to change the font, but otherwise just passes this option down to the book class and any loaded packages, several of which do something with it.

review

The review option makes it possible to prepare a document that is one step closer to the final version. Almost all the formatting of the final version is present, along with the labels and keys as in the draft option. A document prepared with the review option would be the one to personally check for proper formatting and possibly giving to your advisor if (s)he wished to suggest corrections.

final

The final style option produces the document for the production of archival copies of the dissertation for submission to the Graduate School. It is also the style option that you should use when you submit it to the Graduate School for formatting checks. The  $NDdiss2\varepsilon class$  itself just passes this option down to the book class and any loaded packages, several of which do something with it.

twoadvisors

If you have two advisors for your project/research, selecting the twoadvisors option produces an appropriately formatted title page. The \secondadvisor macro command (discussed in Section 4.1) is used to specify the name of the second advisor.

numrefs textrefs Exactly one of these options – numrefs or textrefs, should be specified. numrefs results in a numbered citation sytle with natbib and the "nddiss2e" or "nddiss2enoarticletitles" citation style file<sup>3</sup>. Using textrefs changes the citation

<sup>&</sup>lt;sup>3</sup>nddiss2e.bst is a slight modificiation of abbrvnat.bst in the natbib package; nddiss2enoarticletitles.bst is essentially the same as nddiss2e, but does not display the titles of journal articles, as this is the standard in some fields

style to be similar to "author-date" style with the same files. If none of these options is specified, the default style of numbered citations (ie. same as if numrefs was used) is used.

sort compress sort&compress At most one of these options should be selected. The sort option will cause both numerical and "author-date" style references to be sorted in the order that they appear in the bibliography when multiple references are cited. The compress option compresses numerical citations, e.g. it turns [1,2,3] into [1-3], and does nothing to "author-date" style references. The sort&compress option first sorts and then compresses numerical references, and only sorts "author-date" style references.

Since the same set of packages and style files result in differing citation formats, it is *strongly* suggested that you refer to the documentation natnotes.dvi in your TEXMF tree, to be aware of the various ways in which you can make a citation in your text.

10pt 11pt

12pt

The choice of the fontsize is only applicable with the draft option used. By default, the document will be prepared in the 10pt size for the draft style option. For the review and the final style options, the document is prepared in the 12pt font size and choosing any other font size option will be ignored.

noinfo

Using the noinfo option disables the information page produced when the review or final style options are used. It is recommended that you do not disable the "info" page unless it is the final most copy/copies for submission to the Graduate School (in which case you should disable it).

twoside

Using the twoside option causes the class file to prepare a document meant to be printed double-sided. Do NOT turn in your document this way to the Graduate School! This option is strictly for if you want to prepare a two-sided document for your own use. The only difference from the one-sided document is in the page layout.

nocenter

Using this option allows non-centered chapter titles. Do NOT turn in your document this way to the Graduate School!

openbib

Using this option formats your bibliography in the following manner:

Author

Article/book title

Other information

Website, if applicable

Usually you would not need to use this option since the default layout of the bibliography is acceptable.

Thus,  $\documentclass[draft,12pt]{nddiss2e}$  would produce a document in draft format in 12pt font size and

\documentclass[final,twoadvisors,noinfo]{nddiss2e} would produce a document (with modified title page) for final submission to the Graduate School.

### 3 Features

A number of packages are required by default and must be present in your TEX search path (if you use a package manager such as MiKTeX or TeXLive, it will

take care of this for you). As far as possible, these have been tested for proper formatting style with the NDdiss2 $\varepsilon$  class file. The list includes ifthen, exscale, ifpdf, xspace, longtable, indentfirst, tabularx, showkeys, enumerate, latexsym. epsfig, color, graphicx, url, setspace<sup>4</sup>, amsmath, amssymb, float, lscape, rotating, booktabs, and natbib<sup>5</sup>. Sameer urges you to read the documentation of these packages available in the TEXMF tree, if you think you might use their features or want to tweak some advanced options. Of these packages, ifpdf, longtable, natbib, float, booktabs, rotating, url, and setspace are not part of the LATEX required distribution, so you may need to download them. They are all available through both MiKTeX and TeXLive; note that ifpdf is part of the oberdiek bundle, which is what you need to download to get that package if it is not already installed on your system.

Other packages may or may not be appropriate for use with the  $NDdiss2_{\varepsilon}$  class when producing copies to be submitted to the Graduate School. Please be careful when using packages that change the default fonts, or the layout(s).

In general, the official guidelines of the Graduate School are followed to the maximum extent possible. This includes proper formatting of the title page and the abstract page (from the ndthesis package), numbering of the pages in the frontmatter, generation of properly formatted table of contents, list of figures etc., as well as bibliography at the end. As per the guide, number of different fonts and font sizes used in the thesis is kept to a minimum. The contents, all lists and the bibliography are single-spaced but the inter-line spacing for the rest of the document is double.

# 3.1 Generating PDF document

The  $\operatorname{NDdiss2}_{\mathcal{E}}$  class also allows production of pdf documents with  $\operatorname{pdfIaTEX}$ . As of Spring 2013, this is the preferred method of compilation. In this case, the  $\operatorname{hyperref}^6$  and  $\operatorname{pdfIscape}$  packages are also required. The  $\operatorname{hyperref}$  package ensures that the generated pdf document contains internal as well as external links for citations and bookmarks. A document produced by this method also contains embedded fonts (press quality pdf) and is suitable for electronic submission to the library and for microfilm archiving. Although the most appropriate options for  $\operatorname{hyperref}$  are passed on, for advanced features refer to its documentation. The  $\operatorname{pdfIscape}$  package flips pages with landscape orientation in the pdf file for easier reading, but the location of the page numbers does not change. Neither of these packages is part of the required  $\operatorname{LATEX}$  distribution, so you may need to download them. The  $\operatorname{pdfIscape}$  package is part of the  $\operatorname{oberdiek}$  bundle.

Figures must be in pdf, jpeg, png, or gif format, not encapsualted postscript (eps). An easy way to convert your *eps* files to *pdf* files is to use the utility epstopdf or eps2pdf, which should be available on your unix-like distribution already (should you have one). It is also possible to convert your eps files to pdfs using an online conversion tool. Searching for "eps to pdf" brought up several free options in Fall 2012.

 $<sup>^{4}</sup>v6.7[2000/12/01]$  or above

 $<sup>^{5}</sup>$ v8.31[2009/07/16] or above

<sup>&</sup>lt;sup>6</sup>Needs to have been updated since 2010. Exact oldest verison number allowable unknown.

# 4 Arrangement of contents

A dissertation or a thesis document must contain the following parts, in the order listed. Only those explicitly marked as optional may be omitted. Again, Sameer wishes to point out that the official guide must be referred and its guidelines override the order listed here.

- 1. Title Page
- 2. Copyright page
- 3. Abstract (optional for Master's thesis)
- 4. Dedication (optional)
- 5. Table of Contents
- 6. List of Figures
- 7. List of Tables
- 8. List of Symbols (optional)
- 9. Preface (optional)
- 10. Acknowledgments (optional)
- 11. Text
- 12. Appendix (or Appendices) (optional)
- 13. Bibliography (or References, or Works cited)

The macros and environments described below ease the formatting of these parts.

### 4.1 Title page

The title page is generated by the standard IATEX macro \maketitle with no arguments. This macro has been modified for providing a title page format required for dissertations/theses.

Prior to invoking it in your document, you should declare:

- The title of the document, using the \title macro. Note: title must be in ALL caps, e.g. \title{THIS IS A TITLE \\ IN TWO LINES}. You may use linebreaks within the title, and the title may be up to four lines long. The spacing for titles of five or more lines may be off.
- Your name (full and exactly as registered with the Graduate School), using the \author macro, e.g. \author{Gary Graham Gordon-Graeme}).

\work{}

• Whether the document is a *Thesis* or a *Dissertation* as the argument of the \work macro, e.g. \work{Dissertation}).

\degaward{}

• The degree you're aiming for (in full) with the \degaward macro, e.g. \degaward{Doctor of Philosophy} or \degaward{Master of Science\\in\\Engineering}.

\advisor{}

• The name of your advisor as argument to the \advisor macro.

\secondadvisor{}

• The name of your second advisor, if any, with the \secondadvisor macro<sup>7</sup>.

\department{}

• The name of the department in the argument of the \department macro, e.g. \department{Gnulogical Engineering}).

\degdate{}

• The month and year of the defense of the thesis with the \degdate e.g. \degdate{June 2004}). If you forget to declare this, the current month/year combination will be automatically used.

\maketitle

After defining the above macro arguments, use \maketitle to generate a title page, which includes your entries. All the above macros are required and if missing, they may result in errors in the generation of the title page.

## 4.2 Copyright page

\makecopyright \makepublicdomain

The \makecopyright macro should be invoked after \maketitle to produce a copyright page. Alternatively, you can use \makepublicdomain to produce a page with the message "This document is in the public domain." Note that the absence of the copyright page does not place your dissertaion in the public domain, you must declare it as such explicitly.

\copyrightholder{}
\copyrightyear{}

Prior to calling \makecopyright, you may specify a different name for the copyright holder (the default is the name given through the \author macro) and for the copyright year (the default being the current year). You should do this with the \copyrightholder{ $\langle name \rangle$ } and \copyrightyear{ $\langle year \rangle$ } macros.

# 4.3 Abstract page(s)

abstract

The abstract environment has been modified from the default in the report class to comply with the requirements of the Graduate School. The abstract text should be placed between \begin{abstract} and \end{abstract}. If the abstract is longer than one page, the environment will place the author's name is placed in the top-right header.

\abstractname{}

You may use  $\abstractname{\langle text \rangle}$  to change the abstract caption to text. Default name: Abstract.

#### 4.4 Dedication

dedication

The format of dedication is essentially free, but you may want to use the dedication

<sup>&</sup>lt;sup>7</sup>this macro is necessary when the two advisors option is used while invoking ND diss $2_{\varepsilon}$  class

\dedicationame{}

environment for this purpose. This environment will center the text of your dedication vertically on the page. The dedication is optional.  $\dedicationname\{\langle text\rangle\}\$  may be used to change the title for the dedication page. Default name:  $\mbox\{\}\$  i.e. an empty title. If a different title is desired, note that the Graduate School requires that it be in all caps, and that ensuring that this is so is your responsibility.

# 4.5 Table of contents and Lists of Figures and Tables

\tableofcontents
\listoffigures
\listoftables

Use the macros \tableofcontents, \listoffigures and \listoftables in this order, to produce the required table of contents and list of figures and tables. Note: the "list of figures" should precede the "list of tables" as per the Graduate School guide, so make sure you call the commands in the correct order!

\contentsname{}
\listfigurename{}
\listtablename{}

The macros \contentsname, \listfigurename and \listtablename may be used to change the caption for Table of Contents, List of Figures and List of Tables, respectively. By default, they are named as CONTENTS, FIGURES and TABLES. If different titles are desired, note that the Graduate School requires that these be in all caps, and that ensuring that this is so is your responsibility.

## 4.6 List of symbols

symbols

The symbols environment is useful in formatting the list of symbols/abbreviations used in your work. It takes an optional argument specifying the desired format, e.g. \begin{symbols}[cl] for first column centered and the next column aligned left. By default, the first column will be right aligned and the second column will be left aligned. You may use any of the standard tabular column alignment options. As earlier, the caption for the list of symbols can be changed by using the \symbolsname macro. Default name: SYMBOLS. Also as earlier, this title must be capitalized, and it is your responsibility to do this.

 $\verb|\symbolsname|{}|$ 

 $\sum_{sym}{}{}$ 

Another macro  $\sum {\langle symfol \rangle} {\langle definition \rangle}$  makes the task of entering the symbols and their meanings in the symbols environment easier. \sym takes two arguments - first, a math "object" and second, assumed to be the plain text describing the symbol. Any plain text in the first argument needs to be set with  $\mathbf{mathrm}\{...\}$  and any math symbol in the second needs to placed in  $\mathbf{...}$ . Example: \sym{\beta\_\mathrm{norm}}{Definition for }

### 4.7 Preface

preface
\prefacename{}

An environment preface is provided for formatting the preface to the document. The name of this *chapter* may be changed by \prefacename macro; as usual, it must be in all caps, and doing this is your responsibility. Default name: PREFACE.

# 4.8 Acknowledgments

acknowledgments \acknowledgename{}

The environment acknowledgments is used to format the acknowledgment *chapter*. As above \acknowledgename macro may be used to change the title name; as

usual, it must be in all caps, and doing this is your responsibility. Default name:  ${\tt ACKNOWLEDGMENTS}$ .

#### 4.9 Text

\mainmatter

Use the macro \mainmatter at the beginning of the text sections i.e. all text matter should follow this macro as in the book class. The text is formatted in \normalspacing i.e. double-spacing. The pages are numbered in plain pagestyle such that the page numbers are centered in the bottom. The chapter titles can be multi-line, and if so are formatted doubly spaced.

\unnumchapter{}

Use the macro \unnumchapter to create to create unnumbered chapters that appear in the TOC. Don't forget that chapter names should be in all caps!

## 4.10 Appendix

\appendix

As in the book class, use the \appendix to mark the end of the last chapter in the main section and the start of the appendices. To begin an appendix, using a \chapter{ $\langle title \rangle$ } macro. Appendices will be automatically "numbered" alphabetically.

#### 4.11 Backmatter

\backmatter

This macro separates the bibliography, index and glossary from the main matter and any appendices.

## 4.12 Bibliography

\bibliography

You may use the  $\bibliography\{\bibliography\}\$  macro to generate the bibliography with BibTeX. In order to use the BibTeX path for generating the bibliography, you needs to have all the bibliographic data in BibTeX files. You should refer to BibTeX manual for details about making a .bib file and format for the entries.

\bibname{}

The default name for this *chapter* is BIBLIOGRAPHY. You may change it by using the macro command  $\bibname{\langle newbibname \rangle}$ . It must be in all caps, and it is your responsibility to do this.

thebibliography

Alternatively, you can also make your own bibliography by using the bibliography environment. In this case, you would have to write the reference entries in the right format in your .tex source file itself. If you are using the textrefs option, you'll need to consult the natbib manual to ensure that you enter your entries in the format required by the package.

For citing references in the text, the package natbib is included with options: numbers, sort&compress (numrefs option) or authoryear, sort (textrefs option). The package natbib is a fantastic package that has numerous macros for citing in different ways. Sameer recommends reading its documentation.

Warning: The packages cite and citation are NOT compatible with the natbib package, and they must not be used.

## 5 Note for the authors

As noted earlier, the dissertation author must make sure that the following conditions are met in order to generate a dissertation acceptable by the Graduate School:

- List of Figures should be *before* List of Tables, i.e. the macro command \listoffigures comes before \listoftables in the frontmatter.
- Chapter titles need to be written in ALL CAPS.
- Table caption must be *above* the table, but the figure caption should be *below* it. In case of the table environment, this can be achieved by putting \caption before you include the table (e.g. in a tabular environment). In the figure environment, \caption goes after the \includegraphics macro command.
- Table captions need to be in ALL CAPS as well.
- Bibliography is the last section/chapter of the thesis.<sup>8</sup>

## 5.1 Chapter-wise bibliography

It is now possible to obtain bibliography as a section in each chapter (as is common in some departments esp. humanities) with some minor code implementation in the .tex files. To do this you have to load the package chapterbib (without any options) in the preamble of your main tex file and redefine some commands as below -

```
%% Main source file %%
\documentclass[...]{nddiss2e}
\usepackage{chapterbib}
\renewcommand{\bibname}{Cited works}
\renewcommand{\bibsection}{\section{\bibname}}
...
\begin{document}
\include{chptr1}
...
\include{appndx}
\end{document}
```

In such a case, you must separate the chapters or sections in which you want individual bibliographies in different files and *include* them in the main file as above. Each such \included file must contain its own \bibliographystyle{nddiss2e} and \bibliography{...} command at an appropriate position. There should not be any bibliographic commands in the main source file.

 $<sup>^8</sup>$ Except if you are using chapter-wise bibliography

After compiling the main tex file once (with latex or pdflatex)<sup>9</sup>, you would have to run bibtex on each of the separate files to obtain a .bbl for each file. The remaining steps are the same as for a normal .tex file.

You can find more details of this in the natbib manual (natbib.pdf) in the TEXMF tree.

# 5.2 Tips and suggestions

- It is *strongly* recommended that you compile your document with pdfLATEX. Compiling to dvi or ps first may result in "fuzzy" fonts when viewing the document on your screen. Additionally, the benefits of hyperref and pdflscape are only available if you compile using pdfLATEX.
- Use the \toprule, \midrule and \bottomrule macro commands (from the booktabs package) in the tables for generating the appropriate horizontal rules. Use of vertical rules to separate columns in tables, is in general, bad style and should be avoided as much as possible.
- Use the longtable environment for handling very long tabular materials. Again, use the vertical rules only if very necessary.

```
\begin{longtable}{lc}
\caption[]{LONG TABLE CAPTION \label{tab:longtable} }
\toprule
Heading 1 & Heading 2 \\
\midrule
\endfirsthead
\caption[] { \emph{Continued} } \\
\midrule
Heading 1 & Heading 2 \\
\midrule
\endhead
\endfoot
\bottomrule
\endlastfoot
% Now the tabular material %
Long & Table etc. \\
\end{longtable}
```

• If a figure/table is very wide and will not fit normally, use the landscape environment (from the included Iscape package) to format them in landscape mode. They will automatically appear on a separate page. If you use pdflATEX to compile your document, then the included pdflscape package will flip this page on the screen for easier reading. The sidewaystable environment (from the included rotating package) is incompatible with the current class and must be avoided.

 $<sup>^9\</sup>mathrm{This}$  creates .aux files which are needed by bibtex

- Usually the width of the figure/table captions is 90% of the textwidth (i.e. 0.9\textwidth), but if needed can be changed as per the following:
  - Use a minipage environment of appropriate width and enclose your tabular or figure float inside it, or
  - set the \capwidth inside the table or the figure environment, and \LTcapwidth outside the longtable environment, e.g.,

- Use tabularx environment for the actual formatting of the tables (within the table environment). It differs slightly from tabular environment and you should refer to their documentation in the TEXMF tree for more information.
- If you've used a longtable environment in your document, it might be necessary to compile the document multiple times so as to get proper alignment of columns. This is documented in the longtable manual.
- If you wish to use \footnotes in the longtable environment, please read its documentation. There are some handicaps present.
- A new macro command \subsubsection (self-explanatory) has been defined. It is numbered as 3.2.1.4 in the TOC<sup>10</sup>.
- To cite a website in your bibliography<sup>11</sup>, use the following format in your .bib file:

This when processed with the nddiss2e.bst citation style file gives: 111. N. Fairley. CasaXPS VAMAS processing software. Website. http://www.casaxps.com.

<sup>10</sup> Megan thinks that this is a standard command in Spring 2013, but is leaving Sameer's

original note here in case she is wrong

11 More info at http://www.tex.ac.uk/cgi-bin/texfaq2html?label=citeURL

#### 5.3 You found errors?

If you find some errors in formatting of your document, most likely these are NOT due to the  $NDdiss2_{\varepsilon}$  class, but due to either wrongly used commands/macros or conflicting commands/macros in a package that you might have used ie. a mistake from your side. Please verify that before contacting anyone regarding the class file.

Read the manuals for the packages that you might have used and find out if they have macro commands that modify the page-layout, spacing etc. or if they conflict with already defined commands (e.g. packages natbib and cite redefine the same command \cite in different ways). Sameer would suggest that you read the manuals anyway! It is a good practice.

In the possible scenario that you have found a significant error, please try to find out the source of the error and, even better, a possible alternative, and please report it to the Graduate School's reviewer(s). It would also be great, if you try to find a solution for the problem and inform them of that as well. Please also let them know if you find this documentation confusing or misleading or if any mistakes are present.

Your doing so will ensure that the reviwer(s) are aware of the problem and its possible solutions and they can give better answers to the people who might encounter similar problems. It will also help making the future versions of the class file better.

# 6 Example

Below is a basic .tex sample. A file called template.tex<sup>12</sup> is generated from nddiss2e.ins which might serve as a guide for your document. The example directory contains a mock thesis modified from the ndthesis class file and should also be helpful.

```
\documentclass[numrefs,final]{nddiss2e}
 \begin{document}
 \frontmatter
\title{}
 \author{}
 \work{Dissertation}
 \degaward{Doctor of Philosophy}
 \advisor{}
 \department{}
 \maketitle
 \makepublicdomain
 ^{12}\mathrm{Most}
          likely
                 present
                              the
                                    same
                                           directory
                                                         nddiss2e.cls
                                                                                  in
TEXMF/tex/latex/nddiss2e/
```

```
\begin{abstract}
Abstract here
\end{abstract}
\verb|\command{\dedicationname}{\mbox{}}|% \ Empty \ dedication \ title
\begin{dedication}
For Someone
\end{dedication}
\tableofcontents
\listoffigures
\listoftables
\begin{preface}
Preface here
 \end{preface}
\begin{acknowledge}
Thanks to everyone
\end{acknowledge}
\begin{symbols}
\sym{a}{definition of a}
\verb|\end{symbol}|
\mbox{\mbox{\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\m
\chapter{One} % Chapter 1
All the text ...
 \appendix
\verb|\chapter{Additional data}| % Appendix A
\backmatter
\bibliographystyle{nddiss2e}
\bibliography{bibdatabase}
\end{document}
```

# 7 The Implementation

Following is our attempt at documenting the source of the NDdiss $2\varepsilon$  class file for the TFX hackers.

At the start, we define the base version of LATEX  $2\varepsilon$  needed and the label information for the NDdiss $2\varepsilon$  class.

```
1 \NeedsTeXFormat{LaTeX2e}[1999/12/01]
2 \ProvidesClass{nddiss2e}
3     [2013/04/16 v3.2013^^J%
4     Notre Dame Dissertation document class by Sameer Vijay and updated by Megan Patnott^^J]
5 %
```

# \dissfileversion \dissfiledate

The \dissfileversion and \dissfiledate macros contain the version and the date of the release.

```
6 \providecommand{\dissfileversion}{3.2013}
7 \providecommand{\dissfiledate}{2013/04/16}
8 7
```

New boolean variables for the options used in  $NDdiss2_{\varepsilon}$  class are set here with default values.

```
9 \newif\ifdiss@draft
                                   \diss@drafttrue
10 \newif\ifdiss@review
                                   \diss@reviewfalse
11 \newif\ifdiss@final
                                   \diss@finalfalse
12 \newif\ifinfo@page
                                   \info@pagetrue
13 \newif\ifadvisors@two
                                   \advisors@twofalse
                                   \diss@dedicationfalse
14 \newif\ifdiss@dedication
15 \newif\ifnum@refs
                                    \num@refstrue
16 \newif\ifcentered@chaptitle
                                   \centered@chaptitletrue
17 %
```

draft Exactly one of these options must be present in order to get a proper document. These review options set appropriate boolean variables (flags) and pass some common options to the final parent book class.

```
18 \DeclareOption{draft}{
19
      \setlength\overfullrule{5pt}
20
      \typeout{DRAFT MODE}\typeout{}\info@pagefalse%
21
      \diss@drafttrue\diss@reviewfalse\diss@finalfalse
22
      \PassOptionsToClass{letterpaper,oneside,draft}{book} }
23 %
24 \DeclareOption{review}{
      \typeout{REVIEW MODE}\typeout{}\info@pagetrue%
25
26
      \diss@draftfalse\diss@reviewtrue\diss@finalfalse
      \PassOptionsToClass{12pt,letterpaper,oneside,final}{book} }
27
28 %
29 \DeclareOption{final}{
      \setlength\overfullrule{0pt}
30
      \typeout{FINAL MODE}\typeout{}\info@pagetrue%
31
```

```
\diss@draftfalse\diss@reviewfalse\diss@finaltrue
              32
                     \PassOptionsToClass{12pt,letterpaper,oneside,final}{book} }
              33
              34 %
    numrefs
              The options numrefs or textrefs select the appropriate citation style i.e. "numbered"
              or "textual", respectively. By choosing textrefs, one can get "author-date" style of
   textrefs
              citation in the text. The default is numrefs.
              35 \DeclareOption{numrefs}{
                  \typeout{NUMBERED REFERENCES}\num@refstrue}
              37 \DeclareOption{textrefs}{
                  \typeout{TEXTUAL REFERENCES}\num@refsfalse}
              The option nocenter allows non-centered chapter titles.
              39 \DeclareOption{nocenter}{\centered@chaptitlefalse}
              The openbib option is useful in creating indented bibliography. Usually you would
              not need to use this option since the default layout of the bibliography is very much
              acceptable.
              41 \DeclareOption{openbib}{%
                    \PassOptionsToPackage{openbib}{natbib}
              43 }
              44 %
              The sort option is passed to natbib, and causes multiple citations to be listed in the
              sequence they appear in the bibliography.
              45 \DeclareOption{sort}{%
              46 \PassOptionsToPackage{sort}{natbib}
              47 }
              48 %
              The compress option is passed to natbib, and causes numerical citations to be compressed
              so that, e.g. 1,2,3 becomes 1-3. Does not also sort.
              49 \DeclareOption{compress}{%
              50 \PassOptionsToPackage{compress}{natbib}
              51 }
              52 %
              The sort&compress option sorts numerical citations, and then compresses them.
              53 \DeclareOption{sort&compress}{%
              54 \PassOptionsToPackage{sort&compress}{natbib}
              55 }
              56 %
              The other options are declared in the following lines.
              The twoadvisors option sets the flag for modifying the layout of the title page.
twoadvisors
              57 \DeclareOption{twoadvisors}{\typeout{TWO ADVISORS}\typeout{}%
              58
                     \advisors@twotrue}
              59 %
```

```
The options 10pt, 11pt or 12pt are passed on to the book class if appropriate, depending
11pt
      on whether the \diss@draft flag is set true.
12pt
      60 \DeclareOption{10pt}{%
         \ifdiss@draft%
           \PassOptionsToClass{10pt}{book}%
      63
          \else%
           \OptionNotUsed%
      64
           \ClassWarningNoLine{nddiss2e}%
      65
             {Font size 10pt not allowed; using 12pt}%
      66
         \fi%
      67
      68 }
      69 \DeclareOption{11pt}{%
         \ifdiss@draft%
      70
           \PassOptionsToClass{11pt}{book}%
      71
          \else%
      72
           \OptionNotUsed%
      73
           \ClassWarningNoLine{nddiss2e}%
      74
      75
             {Font size 11pt not allowed; using 12pt}%
      76 \fi
      77 }
      78 \DeclareOption{12pt}{%
            \PassOptionsToClass{12pt}{book}%
      79
      80 }
      81 %
      82 \DeclareOption{noinfo}{\info@pagefalse}
```

The twoside option is for when you want to prepare a two-sided document for your own use. The only difference from the one-sided document is in the page layout. This option is passed on to the parent book class.

```
84 \DeclareOption{twoside}{\typeout{TWO SIDED DOCUMENT}% 85 \PassOptionsToClass{twoside}{book} }% 86 %
```

All options other than those defined above are ignored and a warning is printed on the screen during compile-time. After processing all the options, the book class is loaded with the specified options.

```
87 \DeclareOption*{\ClassWarning{nddiss2e}%
88 {UnknownOption '\CurrentOption'} }%
89 \ProcessOptions\relax
90 \LoadClass{book}
91 %
```

At this stage, the packages ifthen, exscale, ifpdf, longtable, xspace, indentfirst, tabularx, enumerate and latexsym are loaded. It is important to load these in a specific order so as not to cause conflicts in definitions of certain macros.

```
92 \RequirePackage{ifthen,exscale}
93 \RequirePackage{ifpdf}
94 \RequirePackage{longtable}
95 \RequirePackage{xspace}
```

```
96 \RequirePackage{indentfirst}
97 \RequirePackage{tabularx}
98 \RequirePackage{enumerate}
99 \RequirePackage{latexsym}
100 %
```

If the \diss@final is set false (when using draft or review option) then the showkeys package is also loaded.

```
101 \ifdiss@final\relax\else\RequirePackage{showkeys}\fi 102 \%
```

Depending in whether you are using pdfL $^{A}T_{E}X$  or plain L $^{A}T_{E}X$ , epsfig, color and graphicx are loaded with respective options.

```
103 \ifpdf
     \RequirePackage[pdftex]{epsfig}
104
     \RequirePackage[pdftex]{color}
105
     \RequirePackage[pdftex]{graphicx}
106
     \AtBeginDocument{
     \pdfadjustspacing=1
108
109
     }
110 \else
     \RequirePackage[dvips]{epsfig}
111
112
     \RequirePackage[dvips]{color}
113
     \RequirePackage[dvips]{graphicx}
114 \fi
115 %
```

Now the natbib package is loaded with its options, appropriate to numrefs or textrefs class option. If numrefs is specified, then natbib is read-in with its options for "numbered" references and sorted & compressed (eg. [3-6,8-10]). In this case, the default delimiter is square brackets and the default seperator is a comma. For the textrefs option, the natbib package is read-in so as to sort the references in an "author-date" style of citations. The default delimiter and seperator, in this case, are round brackets and colon, respectively.

```
116 \ifnum@refs
117 \RequirePackage[numbers]{natbib}
118 \else
119 \RequirePackage[authoryear]{natbib}
120 \fi
```

Additionally, the packages amsmath, amssymb, float, Iscape, booktabs, rotating, url and setspace are loaded when (pdf)IATEX processes \begin{document}. Again, the order of these packages is important. Additionally when using pdfIATEX, the package hyperref (for internal/external links in the document) is also loaded. The options for this package have been tested to produce a document which can be printed on laser printers without any problems because of colored link boxes. Megan added required package pdfIscape, which is part of the oberdiek bundle in MiKTeX and TeXLive. Using this package will flip landscape pages on the screen so that it's easier to read.

```
121 \AtBeginDocument{
122 \RequirePackage{amsmath,amssymb}
123 \RequirePackage{float}
```

```
124 \RequirePackage{lscape}
125 \RequirePackage{booktabs}
126 \RequirePackage{rotating}
127 \RequirePackage{url}
128 \RequirePackage[doublespacing] {setspace} [2000/12/01]
129 \ifpdf
130 \RequirePackage{pdflscape}
     \RequirePackage[pdftex,
131
      plainpages=false,
132
      pdfpagelabels,
133
                bookmarks=true,%
134
135
                bookmarksnumbered=true,%
                linktocpage=true,%
136
                breaklinks=true,%
137
                bookmarkstype=toc,%
138
                colorlinks=false,%
139
                pdfpagemode=UseOutlines] {hyperref}
140
141 \fi
142 }
143 %
Set the \pagestyle for the document to plain here and define default spacing.
144 \AtBeginDocument{
145 \pagestyle{plain}
146 \normalspacing
147 \typeout{Pagestyle and spacing normal}
148 }
149 %
Here, define some spacing macros for page layout and doublespacing.
150 \newcommand{\normalspacing}{\doublespacing}
151 \newcommand\single@baselinestretch{1.0}
152 \newcommand\double@baselinestretch{1.66}
153 \newlength{\single@skip}
154 \textbf{\setlength{\single@skip}{\single@baselinestretch\ em}}
155 \newlength{\double@skip}
156 \setlength{\double@skip}{\double@baselinestretch em}
157 \setlength{\footnotesep}{\double@skip}
```

Define new lengths for some variables for a proper layout of normal pages, pages with text and figures and pages with only floats. Note that although the geometry package is usually easier, when Megan tried to switch to that she discovered that something ends up overwriting it and, although the the showframe option showed that the margins were setting correctly, the text didn't look like they were. So these length values are set to what geometry said they should be to get a 1.5 in left margin and 1 in margins on all other sides (we'll use vspace commands later to get the 2 in top margin on pages where that's needed).

```
159 \setlength{\hoffset}{0pt}
160 \setlength{\voffset}{0pt}
161 \setlength{\topmargin}{-32pt}
```

```
162 \setlength{\headsep}{20pt}
                                     163 \setlength{\marginparwidth}{47pt}
                                     164 \setlength{\marginparsep}{7pt}
                                     165 \setlength{\textheight}{648pt}
                                     166 \left\{ \left( \frac{432pt}{432pt} \right) \right\}
                                     167 \setlength{\oddsidemargin}{36pt}
                                     168 \setlength{\evensidemargin}{36pt}
                                     169 \setlength{\footskip}{30pt}
                                     170 %
                                     171 \setlength{\floatsep}{30pt}
                                     172 \setlength{\intextsep}{50pt}
                                     173 %
                                     174 \ensuremath{\clearemptydoublepage}{\newpage{\pagestyle{empty}}\%}
                                     175
                                                       \cleardoublepage}}
                                     176 %
                 \nddiss Define the macro \nddiss that is the logo used in the titlepage and the stamp in the
                                       dissertation document.
                                     177 \DeclareRobustCommand{\nddiss}{%
                                                                 \textsf{{\scshape nd}diss}\kern-0.03em%
                                     178
                                     179
                                                                 2$_\mathsf{\textstyle\varepsilon}$}
                                     180 %
                      \work Here define new macros for use in the dissertation title page.
            \degaward 181 \renewcommand{\title}[1]{\def\@title{#1}}
              \verb|\scondadvisor|_{183} \\ \verb|\scondadvisor|_{1
       \degdate _{185} \ifadvisors@two
                                                        \newcommand{\secondadvisor}[1]{\def\@secondadvisor{#1}}
                                     186
                                     187\fi
                                     188 \newcommand{\department}[1]{\def\@department{#1}}
                                     189 \newcommand{\degdate}[1]{\def\@degdate{#1}}
                                                  \degdate{\ifcase\month\or
                                     190
                                                        January\or February\or March\or April\or May\or June\or
                                     191
                                                        July\or August\or September\or October\or November\or December\fi
                                     192
                                                        \space\number\year}
                                     193
                                     194 %
                                       As a default, these macros have an empty argument. Only the \degdate macro takes
                                       on the current month-year combination in the absence of any assignation.
                                     195 % Defaults are empty except the \degdate
                                     196
                                                  \title{}
                                                  \author{}
                                     197
                                                  \work{}
                                     198
                                                  \degaward{}
                                     199
                                                  \advisor{}
                                     200
                                                  \ifadvisors@two \secondadvisor{} \fi
                                     201
                                     202
                                                  \department{}
                                     203 %
```

\@infopage Define \@infopage macro that will create a page which contains important information about the document and the version of  $NDdiss2_{\varepsilon}$  used etc. for the end-user and the proofreader along with a standard disclaimer and details of where to find documentation for the  $NDdiss2_{\varepsilon}$  class file. This information can be suppressed by specifying the "noinfo" option while invoking the  $NDdiss2_{\varepsilon}$  class.

```
204 \DeclareRobustCommand{\@infopage}{
     \thispagestyle{empty}
205
     \null\vspace*{\single@skip}
206
     \begin{center}
207
        This \@work\space \\ entitled \\ \@title \\
208
           typeset with \nddiss\ v%
209
         \dissfileversion\ (\dissfiledate) %
210
         on \today\space for\\
211
212
     \@author\\
     \end{center}
213
214
      \normalfont\normalsize\singlespacing
215
216
217
      \noindent This \LaTeXe\space classfile conforms to the
      University of Notre Dame style guidelines as of Fall
218
      2012. However it is still possible to generate a
219
      non-conformant document if the instructions in the class
220
      file documentation are not followed!
221
222
223
      \begin{center}
      \begin{minipage}{0.75\textwidth}
224
      \noindent Be sure to refer to the published Graduate
225
226
      School guidelines at \url{http://graduateschool.nd.edu}
      as well. Those guidelines override everything mentioned
227
      about formatting in the documentation for
228
229
      this \nddiss\space class file.
230
      \end{minipage}
      \end{center}
231
232
      \noindent It is YOUR responsibility to ensure that the Chapter titles
233
      and Table caption titles are put in CAPS LETTERS. This classfile does
234
      {\em NOT\space} do that! \\
235
236
     \noindent\itshape This page can be disabled by
237
     specifying the "'{\upshape\ttfamily noinfo}", option to the class invocation.
238
     \upshape
239
240 (i.e., {\tilde x}_{\hat x} = 1.6 
241)
242
     \begin{center}
243
       {\bfseries\large\singlespacing This page is \slshape NOT
       \upshape part of the dissertation/thesis. It should be disabled before
244
       making final, formal submission, but should be included in the version
245
       submitted for format check.}
246
     \end{center}
247
```

```
\normalsize\normalfont
           248
                   \nddiss\ documentation can be found at these locations:
           249
                 \begin{center}
           250
                   \url{http://www.gsu.nd.edu}\\
           251
                   \url{http://graduateschool.nd.edu}
           252
           253
                \end{center}
           254
           255 \vfill
           256 \verb| normalfont \verb| normalsize \verb| normalspacing \verb| eject||
           257 %
\maketitle
           Redefine the macro \maketitle to produce the information page as well as the actual
            title page of the dissertation.
           258 \renewcommand{\maketitle}{
                \ifinfo@page\@infopage\else\relax\fi%
           259
           260
                \clearemptydoublepage
                \normalfont\normalsize\normalspacing
            The structuring begins with checking the proper macros for obtaining correct formatting
titlepage
            for the title page. If any of those are not defined, an error is issued and processing
            stopped. Most of the code for this was taken from the earlier ndthesis class and hence,
            the documentation is also picked from there.
                 \begin{titlepage}%
           262
               ifthenelse{\equal{\@work}{}}{\ClassError{nddiss2e}%
           263 \
                {The \protect\work\space macro is undefined.\MessageBreak
           264
                       The title page may be incorrectly formatted.}%
           265
                {Specify \protect\work\space as Dissertation or Thesis}}{\relax}
           266
           267
               ifthenelse{\equal{\@degaward}{}}{\ClassError{nddiss2e}%
           268
                {The \protect\degaward\space macro is undefined.\MessageBreak
                       The title page may be incorrectly formatted.}%
           269
                {Specify \protect\degaward\space. It defines the awarded degree%
           270
                        (Ph.D., M.S., etc.)}}{\relax}
           271
           272
                ifthenelse{\equal{\@advisor}{}}{\ClassError{nddiss2e}%
                {The \protect\advisor\space macro is undefined.\MessageBreak
           273
                       The title page may be incorrectly formatted.}%
           274
                {Spepcify \protect\advisor\space It is who signs your walking papers!}}{\relax}
           275
               ifthenelse{\equal{\@department}{}}{\ClassError{nddiss2e}%
           276
                277
                       The title page may be incorrectly formatted.}%
           278
```

Now set up some skip registers to hold the inter-data spacing. The initial values will create a two-inch top margin for the title page, provided the title is only one line long.

\ifthenelse{\equal{\@secondadvisor}{}}{\ClassError{nddiss2e}%

{The \protect\secondadvisor\space macro is undefined.\MessageBreak

The title page may be incorrectly formatted.}%

{Use \protect\secondadvisor\space for your second advisor}}{\relax}

{Specify which \protect\department\space is awarding your degree?}}{\relax}

279

281

282

283

284 { 285 \fi 286 %

280 \ifadvisors@two

\skip1 is the primary internal spacing command; \skip2 is the spacing between the student's name and the line for the first adviser to sign if there are two advisers and \skip3 is the spacing between the student's name and the line for the adviser to sign if there is only one adviser; \skip4 controls the top margin. We'll account for titles longer than one line in a bit ...

```
287 \skip1=2.1\double@skip
288 \skip2=1.7\double@skip
289 \skip3=2.7\double@skip
290 \skip4=36pt
291 %
```

If the author has two advisors, we need to do a little tweaking to the internal spacing.

```
292 \ifadvisors@two
293 \skip1=1.6\double@skip
294 \else\relax
295 \fi
```

The 2012 formatting guidelines require the title to be 2" from the top of page. If it's more than one line long, we need to adjust the internal spacing:

```
\setbox0=\vbox{\@title}
296
    \ifdim \ht0 > 3\double@skip
297
     \advance \skip1 -.75\double@skip
298
    \else
299
    \ifdim \ht0 > 2\double@skip
300
301
     \advance\skip1 -.5\double@skip
302
     \ifdim \ht0 > \double@skip
303
       \advance\skip1 -.25\double@skip
304
      \fi
305
306 \fi
307 \fi
```

Our default assumes a one-line degree field such as

#### Doctor of Philosophy

but we check to see if it is two or three lines long. If so, we need to remove those extra lines from the internal spacing.

```
308 \setbox1=\vbox{\@degaward}
    \ifdim \ht1 > 2\double@skip
310 \advance\skip1 -.5\double@skip
311
    \else
312
      \ifdim \ht1 > \double@skip
       \advance \skip1 -.25\double@skip
313
      \else
314
       \relax
315
      \fi
316
317 \fi
```

If we have two advisers, a three or four line title, and a three line degree field or two advisers, a four line title, and a two line degree field, then we need to remove some spacing between the name and the first adviser and from the top margin, and give that space to the internal spacing.

```
318 \ifadvisors@two
319 \ifdim \ht0 > 3\double@skip
320 \in \mathbb{C} \\double@skip
321 \advance \skip4 -.675\double@skip
322 \advance \skip2 -.4\double@skip
323 \advance \skip1 .25\double@skip
324 \text{ } \text{lse } \text{ } \text{relax}
325 \fi
326 \else
327 \ifdim \ht0 > 2\double@skip
328 \left| 1 \right| > 2\
329 \advance \skip2 -.4\double@skip
330 \advance \skip1 .1\double@skip
331 \else \relax
332\fi
333 \else \relax
334 \fi
335 \fi
336 \else \relax
337 \fi
Finally we start putting the text in place ... centered, of course.
     \n \null\vspace*{\skip4}
338
     \begin{center}%
339
340
        \@title \par%
341
        \vskip\skip1%
342 %
Now skip the required vertical space, declare that this is for the University of Notre
Dame, and list what degree has been earned.
        A \@work \par%
343
344
        \vskip\skip1%
          Submitted to the Graduate School \\
345
346
              of the University of Notre Dame \\
347
              in Partial Fulfillment of the Requirements \\
              for the Degree of \parante{1}{par}
348
            \vskip\skip1%
349
            \@degaward%
350
351
            \vskip\skip1%
352
            by \\%
353 %
```

Now skip the proper space and place the signature line for the advisor with his/her name typeset below it. This is accomplished by essentially centering a box that is twice as long as the required length of the signature line and placing the line in only the right-hand side.

```
356 \ifadvisors@two
357 \vskip\skip2
```

Now format the author's name.

354 \Qauthor

354 355 **%** 

```
\hspace*{2.75in}\@advisor, Co-Director\\
                  359
                           \else
                  360
                              \vskip\skip3
                  361
                              \label{lem:line} $$ \arrowvert = {1.75in} \underline{\hspace{2.75in}}\%
                  362
                  363
                              \hspace*{2.75in}\@advisor, Director\\
                  364
                  365 %
                   If there is a second advisor, place that line here now.
                  366 \ifadvisors@two %
                            \vskip\double@skip%
                  367
                  368
                              \hspace*{2.75in}\underline{\hspace{2.75in}}\%
                  369
                              \hspace*{2.75in}\@secondadvisor, Co-Director\\
                  370 \fi
                  371 %
                   We end with the department and date; the internal spacing is chosen so that these are
                   at the page bottom.
                  372
                        \vskip\skip1%
                  373
                        Graduate Program in \@department \\%
                  374
                        Notre Dame, Indiana \\
                        \@degdate
                  375
                        \end{center}
                  376
                        \end{titlepage}%
                  377
                  378 }
                  379 %
                   The environment copyrightpage defines the defaults for proper formatting the copyright
  copyrightpage
                   page (if opted).
                  380 \newenvironment{copyrightpage}{%
                        \clearemptydoublepage
                  381
                        \typeout{Copyright page}
                  382
                  383
                        \pagestyle{empty}
                  384
                        \null\vfil
                        \begin{center}\normalspacing}%
                  385
                  386 { \end{center}\vfil\null \clearpage }
                  387 %
\copyrightholder
                   Define a few macros for defining the copyright holder and the year desired. By default,
                   they are taken as the current year and the author of the dissertation.
 \copyrightyear
                  388 \newcommand{\@copyrightyear}{\year}
                  389 \newcommand{\@copyrightholder}{\@author}
                  390 \newcommand{\copyrightyear}[1]{\renewcommand{\@copyrightyear}{#1}}
                  391 \newcommand{\copyrightholder}[1]{\renewcommand{\@copyrightholder}{#1}}
                  392 %
 \makecopyright
                   Finally, the \makecopyright macro creates the copyright page as per defined in the
                   copyrightpage environment.
                  393 \newcommand{\makecopyright}{%
                  394 \ifdiss@final
```

 $\hspace*{2.75in}\underline{\hspace{2.75in}}\%$ 

358

```
\begin{copyrightpage}
395
        \normalfont\normalsize
396
        \copyright\space Copyright by \\
397
        \@copyrightholder \\
398
        \@copyrightyear\\
399
400
       All Rights Reserved \\[10mm]
401
       \end{copyrightpage}
402
     \fi
403 }%
404 %
```

\makepublicdomain Or, if chosen, \makepublicdomain macro creates a copyright page (using earlier copyrightpage environment) that puts the document in public domain.

```
405 \newcommand{\makepublicdomain}{%
     \ifdiss@final
406
       \begin{copyrightpage}
407
           This document is in the public domain.
408
409
       \end{copyrightpage}
410
     \fi
411 }%
412 %
```

Define some new name macros and redefine other name macros as below. These are the names of the respective sections in your dissertation document. If there's a need to change any name, you must use a similar command in the preamble of your document.

```
413 \providecommand{\abstractname}{Abstract}
414 \providecommand{\dedicationname}{\mbox{}}
415 \verb|\providecommand{\prefacename}{PREFACE}|
416 \verb|\providecommand{\acknowledgename}{ACKNOWLEDGMENTS}|
417 \verb|\providecommand{\symbolsname}{SYMBOLS}|
418 \renewcommand{\tablename}{TABLE}
419 \renewcommand{\figurename}{Figure}
420 \renewcommand{\partname}{PART}
421 \renewcommand{\chaptername}{CHAPTER}
422 \renewcommand{\appendixname}{APPENDIX}
423 \renewcommand{\contentsname}{CONTENTS}
424 \renewcommand{\listfigurename}{FIGURES}
425 \renewcommand{\listtablename}{TABLES}
426 \renewcommand{\bibname}{BIBLIOGRAPHY}
427 \renewcommand{\indexname}{INDEX}
428 %
```

This environment is adapted from the report class since the book class does not have one. abstract Additionally, we add a \pdfbookmark for the abstract in the pdf document.

```
429 \newenvironment{abstract}{%
430
     \ifpdf
431
        \pdfbookmark[0]{\abstractname}{abstract}%abstract.0
     \fi
432
433
     \typeout{Abstract page(s)}
     \renewcommand{\@oddfoot}{\@empty}
```

#### \renewcommand{\@evenfoot}{\@empty}

If the abstract extends to a second page, place the author's name in top right corner of that page. Make sure it's upright, as required by the University and that this appears at 0.75'' from the top.

```
\let\@evenhead\@oddhead
436
     \renewcommand{\@oddhead}{\hfil{\upshape\@author}}
437
438
     \null
439
440
     \begin{center}
     \vspace*{36pt}
441
     {\normalsize\mdseries \normalspacing
442
443
         \emptyset \times \mathbb{N}[3.5ex]
         \normalsize\abstractname \\ by \\ \@author\space}%
444
445
       \@endparpenalty \@M
446
       \end{center}\par}%
447 {\par\vfil\null\endtitlepage}
448 %
```

#### dedication

The dedication environment is similar to the abstract environment. This page is numbered 2 and the subsequent pages are numbered accordingly. A pdfbookmark is not created because of a reported issue that Adobe products have with pdfbookmarks containing an \mbox.

```
449 \newenvironment{dedication}{%
     \global\diss@dedicationtrue
     \typeout{Dedication page}
451
     \chapter*{\dedicationname}%
452
     \thispagestyle{plain}
453
     \setcounter{page}{2}
454
455
     \null\centering}
456 {\par\null\clearpage}%
457 %
```

#### \tableofcontents

The \tableofcontents macro is redefined to begin at page 2 if the dedication environment does not exist. It is single-spaced.

```
458 \renewcommand\tableofcontents{%
     \ifdiss@dedication\relax\else\setcounter{page}{2}\fi
459
     \chapter*{\contentsname}%
460
     \ifpdf
461
          \pdfbookmark[0]{\contentsname}{contents}%contents.0
462
     \fi
463
464
     \singlespacing
465
     \@starttoc{toc}%
     \normalspacing
466
     }
467
468 %
```

# \listoftables

\listoffigures These macros are modified to add the \listfigurename and \listoftables to the Table of Contents. Both of these are also single spaced. The inter-entry spacing is changed by adding a \vskip after each entry. This is done in the figure and table environments later.

```
\chapter*{\listfigurename}%
                 470
                         \addcontentsline{toc}{chapter}{\listfigurename}%
                 471
                         \typeout{List of figures - \listfigurename}
                 472
                         \singlespacing
                 473
                 474
                         \@starttoc{lof}%
                 475
                         \normalspacing
                 476 }
                 477 %
                 478 \renewcommand\listoftables{%
                         \chapter*{\listtablename}%
                 479
                         \addcontentsline{toc}{chapter}{\listtablename}%
                 480
                         \typeout{List of tables - \listtablename}
                 481
                         \singlespacing
                 482
                         \@starttoc{lot}%
                 483
                         \normalspacing
                 484
                 485 }
                 486 %
                 These environments are similar to the dedication environment. They are defined as
                  \chapter*{} so they are not numbered and not added to Table of Contents and so, add
acknowledgement
                  that manually by using \addcontentsline.
                 487 \newenvironment{preface}{%
                      \typeout{Preface page}
                 488
                      \chapter*{\prefacename}
                 489
                      \addcontentsline{toc}{chapter}{\prefacename}%
                 490
                 491 }%
                 492 {\par\null\clearpage}%
                 493 %
                 494 \newenvironment{acknowledge}{%
                      \typeout{Acknowledgment page}
                 495
                      \chapter*{\acknowledgename}
                 496
                 497
                      \addcontentsline{toc}{chapter}{\acknowledgename}%
                 498 }%
                 499 {\par\null\clearpage}%
                 500 %
  \unnumchapter
                 Allows the user to create unnumbered chapters that appear in the TOC.
                 501 \newcommand\unnumchapter[1]{%
                 502
                      \chapter*{#1}%
                      \addcontentsline{toc}{chapter}{#1}}
                 503
        symbols Define symbols environment which lays out it as a \chapter* and adds \symbolsname
                 to the TOC. The environment is actually a horizontally centered longtable environment.
                  To aid entry of a symbol and its definition, \sym macro command is also defined.
                 504 \mbox{ } [2]{\mbox{\command}{\$1} \& \#2 \)}
                 505 \newenvironment{symbols}[1][rl]{%
                      \typeout{Symbols page}
                 506
                      \chapter*{\symbolsname}%
                 507
                      \addcontentsline{toc}{chapter}{\symbolsname}%
```

469 \renewcommand\listoffigures{%

```
509 \begin{center}\begin{longtable}{#1}}%
510 {\end{longtable}\end{center}\par\null}
511 %
```

512 \def\@chapter[#1]#2{

545 \vskip 20\p@

548 **\@endpart**} 549 **\def\@spart#1**{%

547 \normalsize\mdseries #2\par}%

{\centering

546 \fi

550

Modify chapter definition in \@chapter to put the word "Chapter" (\@chapap) in the Table of Contents. That is, now the TOC will contain "Chapter 1: First chapter" rather than "1. First chapter." The rest of the format code is essentially the same as that in the book class.

```
513
     \ifnum \c@secnumdepth >\m@ne
514
     \if@mainmatter
       \refstepcounter{chapter}%
515
       \typeout{\@chapapp\space\thechapter.}%
516
       \addcontentsline{toc}{chapter}%
517
         {{\@chapapp\ \thechapter: #1}}%
518
519
         \addcontentsline{toc}{chapter}{#1}%
520
       \fi
521
522
     \else
        \addcontentsline{toc}{chapter}{#1}%
523
     \fi
524
     \chaptermark{#1}%
525
526
     \addtocontents{lof}{\protect\addvspace{10\p0}}%
527
     \addtocontents{lot}{\protect\addvspace{10\p0}}%
     \@makechapterhead{#2}%
528
     \@afterheading }%
529
530 %
 Modify part definition in \@part and \@spart to keep the font size for part headings
 \normalsize and \mdseries. It is otherwise the same as in the book class.
531 \def\@part[#1]#2{%
532 \ifnum \c@secnumdepth >-2\relax
533 \refstepcounter{part}%
534 \addcontentsline{toc}{part}{\thepart\hspace{1em}#1}%
535 \setminus else
536 \addcontentsline{toc}{part}{#1}%
537 \fi
538 \markboth{}{}%
539 {\centering
540 \interlinepenalty \@M
541 \normalfont
542 \ifnum \c@secnumdepth >-2\relax
543 \normalsize\mdseries \partname\nobreakspace\thepart
544 \par
```

```
551 \interlinepenalty \QM
552 \normalfont
553 \normalsize\mdseries #1\par}%
554 \Qendpart}
555 %
```

Now format section headings to conform to the official guidelines.

#### \@makechapterhead

First, modify the chapter heading label to be normalsize'd and centered. Instead of the bold-faced heading label, also make it \mdseries. If we are in the \mainmatter, we add "CHAPTER" and chapter number before actually putting the chapter name otherwise only the "chapter name" is put. Note that chapter/section headings must all be double-spaced.

```
556 \renewcommand{\@makechapterhead}[1]{%
     \vspace*{30pt}%
557
     {\parindent \z@ \raggedright
558
        \ifnum \c@secnumdepth >\m@ne
559
         \normalfont\normalsize%
560
561
         \if@mainmatter
562
            \ifcentered@chaptitle\center\else\relax\fi%
            \@chapapp{} \thechapter\par\nobreak
563
         \fi
564
        \fi
565
566
        \interline penalty \0 M
        \ifcentered@chaptitle\center\else\relax\fi%
        \mdseries{#1}\par\nobreak
568
        \vskip 30\p@
569
     }}
570
571 %
```

#### \@makeschapterhead

Make the TOC, LOF, LOT and other \chapter\* headings in normal size, and \mdseries by modifying the macro \@makeschapterhead. Although these heading labels usually fit in a single-line, we copy the formatting for the chapter heading label (single-spacing) and make the spacing double again for the text.

```
572 \renewcommand{\@makeschapterhead}[1]{%
     \vspace*{30pt}%
573
574
     {\parindent \z@ \raggedright
575
        \normalfont\normalsize%
        \interlinepenalty\@M
576
        \ifcentered@chaptitle\center\else\relax\fi
577
        \mdseries{#1}\par\nobreak
578
        \vskip 30\p0
579
     }}
580
581 %
```

Now, set the section labels to \mdseries rather than bold-faced. We also make sure that these are set in normal spacing, font and size. This is done for each of \section, \subsection, \subsection, \subsubsection, \paragraph and \subparagraph.

```
582 \renewcommand\section{\suppressfloats[t]%
583 \@startsection {section}{1}{\z@}%
584 {-4.2ex \@plus -1ex \@minus -.2ex}%
```

```
{1.8ex \@plus.2ex}%
           585
                   {\normalfont\normalsize\mdseries} }
           586
           587 \renewcommand\subsection{\suppressfloats[t]%
                   588
                   {-3.9ex}\ -1ex \@minus -.2ex}%
           589
           590
                   591
                   {\normalfont\normalsize\mdseries} }
           592 \renewcommand\subsubsection{\suppressfloats[t]%
                   \@startsection{subsubsection}{3}{\z@}%
           593
                   {-3.9ex\@plus -1ex \@minus -.2ex}%
           594
                   {1.2ex \@plus .2ex}%
           595
                   {\normalfont\normalsize\mdseries} }
           596
           597 \renewcommand\paragraph{%
                   \@startsection{paragraph}{4}{\z@}%
           598
                   {3.9ex \@plus1ex \@minus.2ex}%
           599
                   {-1em}%
           600
                   {\normalfont\normalsize\mdseries} }
           601
           602 \renewcommand\subparagraph{%
           603
                   \@startsection{subparagraph}{5}{\parindent}%
           604
                   {3.9ex \@plus1ex \@minus .2ex}%
           605
           606
                   {\normalfont\normalsize\mdseries} }
           607 %
   \lambda Modify the macro \lambda part that formats part titles in the contents-like files (.toc, .lof
            and .lot) by adding a \@dottedtocline macro. The indent width is set to 1.5em -
            to line up a continued line with the section number below it. We also leave less space
            between each part and the last section entry than the default and don't change the font.
           608 \renewcommand*\l@part[2]{%
                 \ifnum \c@tocdepth >-2\relax
           609
           610
                   \addpenalty{-\Qhighpenalty}%
                   \setlength\@tempdima{1.5em}%
           611
           612
                   \begingroup
           613
                     {\leavevmode
                \@dottedtocline{1}{Opt}{\@tempdima}{#1}{#2}
           614
           615
                     }\par
           616
                      \nobreak
                        \global\@nobreaktrue
           617
                        \everypar{\global\@nobreakfalse\everypar{}}%
           618
           619
                   \endgroup
                 \fi}
           620
           621 %
\1@chapter
            Modify the macro \l@chapter that formats chapter titles in the contents-like files (.toc,
            .lof and .lot) by adding a \@dottedtocline macro. The indent width is set to 1.5em
            - to line up a continued line with the section number below it. We also leave less space
            between each chapter and the last section entry than the default.
           622 \renewcommand*{\l@chapter}[2]{%
           623
                 \addpenalty{-\@highpenalty}%
                 \setlength\@tempdima{1.5em}%
```

```
\label{limits} $$\dottedtocline{1}{0pt}{\dottedtocline{#1}{\#2}} $$
                    626
                          \par
                    627
                           \penalty\@highpenalty
                    628
                           \endgroup
                    629
                    630 }
                    631 %
\thesubsubsection We increase the number of section-depth by 1 and force subsubsection entry in the TOC
                      by increasing the \tocdepth. In addition, the label number of \subsubsection is defined
                      to be similar to that for \subsection i.e. all arabic numerals.
                    632 \addtocounter{secnumdepth}{1}
                    633 \addtocounter{tocdepth}{1}
                    634 \mbox{ } \mbox{\ensuremath{\mbox{chesubsubsection}}} \mbox{\ensuremath{\mbox{\%}}}
                            \thesubsection.\arabic{subsubsection}}
                    635
                    636 %
             quote Redefine the quote environment to be single-spaced instead of being same as the rest of
                      the text.
                    637 \renewenvironment{quote}
                                          {\list{}{\rightmargin\leftmargin}%
                    638
                    639
                                            \singlespacing
                    640
                                          \item\relax}
                                          {\endlist}
                    641
                    642 %
           itemize Redefine the itemize environment so that each item is single-spaced, but with a line of
                      space between each item.
                    643 \let\realitemize\itemize
                    644 \let\endrealitemize\enditemize
                    645 \renewenvironment{itemize}
                    646 {\realitemize
                    647 \singlespacing}
                    648 {\endrealitemize
                    649 \doublespacing}
                      itemize
         enumerate Redefine the enumerate environment so that each item is single-spaced, but with a line of
                      space between each item. Note we need the optional argument in order to be compatible
                      with the enumerate package
                    650 \let\realenumerate\enumerate
                    651 \let\endrealenumerate\endenumerate
                    652 \renewenvironment{enumerate}[1][1.]
                    653 {\realenumerate[#1]
                    654 \singlespacing}
                    655 {\endrealenumerate
                    656 \doublespacing}
```

\begingroup \leavevmode

625

enumerate

```
description Redefine the description environment so that each item is single-spaced, but with a
                      line of space between each item.
                     657 \let\realdescription\description
                     658 \let\endrealdescription\enddescription
                     659 \renewenvironment{description}
                     660 {\realdescription
                     661 \singlespacing}
                     662 {\endrealdescription
                     663 \doublespacing}
                      description Set some lengths that are used in the table and the figure environments.
                      Note that we set the caption width (\capwidth) to be 90\% of the \textwidth.
                     664 \setlength\abovecaptionskip{20\p@}
                     665 \newlength \capwidth
                     666 \setlength{\capwidth}{0.90\textwidth}
                     667 \newlength\abovetableskip
                     668 \newlength\belowtableskip
                     669 \newlength\abovefigureskip
                     670 \newlength\belowfigureskip
                     671 \setlength\abovetableskip\belowcaptionskip
                     672 \setlength\belowtableskip\abovecaptionskip
                     673 \setlength\abovefigureskip\abovecaptionskip
                     674 \setlength\belowfigureskip\belowcaptionskip
                     675 %
              figure For the figure environment, first some skip lengths are set, then use \@makefigurecaption
                      to format the captions instead of the default \@makecaption, since the layout is different
                      for figure and the table environment. Further add a \vskip to each entry in .lof file
                      so that the inter-caption spacing seems double-spaced.
                     676 \renewenvironment{figure}{%
                            \setlength{\abovecaptionskip}{\abovefigureskip}
                     677
                     678
                            \setlength{\belowcaptionskip}{\belowfigureskip}
                     679
                            \let\@makecaption\@makefigurecaption
                            \@float{figure}}%
                     680
                     681
                     682
                            \addtocontents{lof}{ {\vskip 0.4em} }%
                     683
                            \end@float%
                     684 }
                     685 %
\@makefigurecaption
                      The \@makefigurecaption is defined to format the caption in a parbox with width equal
                      to \capwidth and is formatted in single-spacing. The interline-spacing is then changed
                      to double after the caption.
                     686 \long\def\@makefigurecaption#1#2{%
                           \vskip\abovecaptionskip
                     687
```

\begin{center}

\parbox{\capwidth}{

{#1}. {#2}%\par

\centering\singlespacing

\vskip\belowcaptionskip\normalspacing }%

688

689

 $690 \\ 691$ 

```
\end{center}
694 }%
695 %
```

table After setting the above and below skip lengths, the table environment is set to be single spaced. However, to obtain double-spacing between the entries, redefine the \arraystretch to be equivalent to the \double@baselinestretch. This way, while there are double-spaced entries, the entry itself is single-spaced. Similar to that in \@makefigurecaption, a \vskip is added to each entry in the .lot file.

```
696 \renewenvironment{table}{%
      \setlength{\abovecaptionskip}{\abovetableskip}
697
698
      \setlength{\belowcaptionskip}{\belowtableskip}
      \singlespacing
699
      \renewcommand{\arraystretch}{\double@baselinestretch}
700
      \let\@makecaption\@maketablecaption
701
      \@float{table}}%
702
703
      \addtocontents{lot}{ {\vskip 0.4em} }%
704
705
      \end@float%
706 }
707 %
```

\@maketablecaption The \@maketablecaption is defined similarly to \@makefigurecaption to have the table label and caption in separate lines and with normal-spacing (double-spaced).

```
708 \long\def\@maketablecaption#1#2{
     \vskip\abovecaptionskip
709
     \begin{center}
710
        \parbox{\capwidth}{
711
       \centering\normalspacing
712
       {#1}\\[\single@skip]
713
714
       {#2}%\par
     \vskip\belowcaptionskip }%
715
716
     \end{center}
717 }
718 %
```

\longtable Similar to the table environment, the longtable environment is made singly-spaced but the \arraystretch is made equal to double the baselinestretch.

```
719 \renewcommand\longtable{%
720
      \singlespacing
      \renewcommand{\arraystretch}{\double@baselinestretch}
721
      \begingroup
722
      \@ifnextchar[\LT@array{\LT@array[x]}}
723
724 %
```

This bit is taken from longtable.sty. In order to obtain double-spacing in the list of \endlongtable tables, a \vskip of 0.4em is added to .lot file.

```
725 \renewcommand\endlongtable{%
726
     \crcr
727
     \noalign{%
```

```
\xdef\LT@save@row{\LT@save@row}}%
                729
                      \LT@echunk
                730
                      \LT@start
                731
                      \unvbox\z@
                732
                733
                      \LT@get@widths
                734
                      \if@filesw
                        {\let\LT@entry\LT@entry@write\immediate\write\@auxout{%
                735
                           \gdef\expandafter\noexpand
                736
                            \csname LT@\romannumeral\c@LT@tables\endcsname
                737
                              {\LT@save@row}}}%
                738
                 739
                      \fi
                 740
                      \ifx\LT@save@row\LT@@save@row
                 741
                        \LT@warn{Column \@width s have changed\MessageBreak
                742
                                  in table \thetable}%
                743
                        \LT@final@warn
                744
                      \fi
                745
                      \endgraf\penalty -\LT@end@pen
                746
                747
                      \addtocontents{lot}{ {\vskip 0.4em} }%
                748
                      \endgroup
                      \global\@mparbottom\z@
                749
                      \pagegoal\vsize
                750
                      \endgraf\penalty\z@\addvspace\LTpost
                751
                      \ifvoid\footins\else\insert\footins{}\fi
                752
                753 }
                754 %
\LT@makecaption For the longtable environment, the \LTcapwidth is set equal to \capwidth. In order to
                 obtain consistent table captions, the command \LT@makecaption is modified in a similar
                 manner as \maketablecaption.
                755 \setlength{\LTcapwidth}{\capwidth}
                756 \renewcommand\LT@makecaption[3]{%
                      \LT@mcol\LT@cols c{\hbox to\z@{\hss\parbox[t]\LTcapwidth{%
                757
                      \vskip\abovetableskip%
                758
                 759
                        \centering\normalspacing
                        #1{#2 }\\[\single@skip]
                 760
                        {#3}\par
                 761
                      \endgraf\vskip\belowtableskip}%
                762
                      hss}
                763
                764 %
       \timenow This macro is used in making the \draftheader and \reviewheader below. It outputs
                 time in HH:MM format.
                765 \newcommand\timenow{%
                      \@tempcnta=\time \divide\@tempcnta by 60 \number\@tempcnta:\multiply
                766
                      \@tempcnta by 60 \@tempcntb=\time \advance\@tempcntb by -\@tempcnta
                767
                 768
                      \ifnum\@tempcntb <10 0\number\@tempcntb\else\number\@tempcntb\fi}
                 769 %
```

728

\let\LT@entry\LT@entry@chop

This header is used in the dissertation document when the draft or review option is used. These headers serve as a note for the date and time of the document compilation.

```
770 \newcommand{\diss@header}{%
       \ifdiss@review Review \else Draft \fi document [\today\/ at \timenow\/]
771
772
773 %
```

The header prepared above is put in the document by modifying the plain and empty pagestyles except when the final option is chosen.

```
774 \ifdiss@final
775
       \renewcommand{\ps@plain}{
           \renewcommand{\@oddhead}{\@empty}
776
           \renewcommand{\@oddfoot}{\hfil\thepage\hfil}
777
           \let\@evenhead\@oddhead
778
779
           \let\@evenfoot\@oddfoot
780
       }%
781 \else
782
       \renewcommand{\ps@plain}{
           \renewcommand{\@oddhead}{\framebox[\textwidth]{
783
               \centering\footnotesize\tt\diss@header}}%
784
785
           \renewcommand{\@oddfoot}{\hfil\textrm{\thepage}\hfil}
786
           \let\@evenhead\@oddhead
787
           \let\@evenfoot\@oddfoot
       }%
788
789
       \renewcommand{\ps@empty}{
           \renewcommand{\@oddhead}{\framebox[\textwidth]{
790
               \centering\footnotesize\tt\diss@header}}%
791
           \renewcommand{\@oddfoot}{\@empty}
792
793
           \let\@evenhead\@oddhead
            \let\@evenfoot\@oddfoot
794
       }%
795
796 \fi
```

\bibsection By redefining \bibsection macro, add the \bibname to the table of contents and as a chapter heading for the bibliography.

```
798 \renewcommand{\bibsection}{
     \chapter*{\bibname}%
800
     \addcontentsline{toc}{chapter}{\bibname}%
801 }%
802 %
```

797 %

\bibfont Changed the \bibfont macro to obtain single-spacing within each bibliographic entry. Between different entries, it is still \normalspacing. In addition, when the numrefs option is selected, the \Obiblabel is redefined to number the bibliographic entries as 1. xxxx instead of the default [1] xxxx.

```
803 \renewcommand{\bibfont}{\singlespacing}
804 \ifnum@refs
     \renewcommand{\@biblabel}[1]{\hfill#1.\hfill}
```

806 \fi 807 %

Lastly, after the bibliography in the final document, add a framed box which contains a blurb about the typesetting program and  $NDdiss2_{\varepsilon}$  version used for preparing the dissertation document.

```
808 \ifdiss@final
809 \AtEndDocument{
        \vfill
810
811
        \centering\singlespacing
812
        \framebox[0.85\textwidth]{
        \begin{minipage}{0.80\textwidth}\footnotesize%
813
        \centering \itshape This document was prepared \& typeset with
814
        \label{latex} $$\displaystyle \operatorname{LaTeX-fi} \ , \ and \ \ $\ \ $\ $\ $\ $. $$
815
        formatted with \upshape\nddiss\xspace\itshape classfile
816
        (v\dissfileversion [\dissfiledate]) provided by Sameer Vijay and
817
818
        updated by Megan Patnott.
819
        \end{minipage} }
        \clearpage}
820
821 \epsilon \
822 %
823 \% \setminus endinput
824 % End of file 'nddiss2e.cls'.
```

# **Change History**

v0.98	completed source
General: Initial beta version 1	documentation 1
v1.0	v3.2013
Release: First release 1   v1.1     General: Minor changes and   clean-up	Release: Some bug fixes, minor changes in documentation, and addition of support for parts MP
General: Some bugfixes, cleaned	$v3.2013\beta$
some of documentation 1	Release: Initial release of updates in order to comply with the
General: More bugfixes, changes in	Graduate School's current
documentation 1 v3.0	formatting regulations and to take advantage of some LaTeX
Release: Major revamp and	package updates. Should be
clean-up of the code, added	functional, and has been
numrefs and textrefs to allow	approved by the
different kinds of citation	Dissertation/Thesis editors,
styles, added some more	but has not undergone
macros and modified others,	wide-scale testing Megan
changed the titlepage a bit,	Patnott 1