Thesis/Dissertation Templates

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Abstract

The templates contained in this `ltxdoc` file have been debugged with the 2018/08/07 version of `mstogs.cls`.

Contents

1 Preface

1.1 File Description

Simply LaTeX the `ths.ins` file to generate the template files for a publication thesis option format thesis, `ptotemplate.tex`, and a LaTeX-standard report class thesis, `rpctemplate.tex`, along with five variants of a thesis chapter. The variants include text only (`chapmin.tex`), floats (`chapflt.tex`), bibliography citations (`chapbib`), nomenclature entries (`chapglo.tex`), and all of the above (`chapall.tex`). The inclusion or removal of these various chapter templates allows one to verify a local LaTeX installation and the associated compile stages.

This documentation file (`ths.dtx`) can be typeset by running it through LaTeX.

Very important: the `<ps>` characters which appear in the code are simply a placeholder for a percent sign (LaTeX comment character). These characters are used so that during the generation of the code output, these lines are not removed. Bottom line, after LaTeX'ing the `ths.ins` file, do a replace all for `<ps>` with `%` to obtain a proper LaTeX file.

1.2 Limitations and Bugs

Added: 2014/10/21 The documentation text may not accurately reflect the current form of the code. The code, however, is correct and produces properly functioning templates.

Added: 2011/10/24 The co-adviser specification does not work as indicated by the original template. The command must have an error in it as the command desires an argument, but when one is provided, it adds the designation co-adviser to the committee memberone.

Resolved (Originally Added: 2011/11/03). The first page of each individual appendix in a thesis with multiple appendices is not correctly generated in LaTeX. At the moment, this would require generating these pages outside of LaTeX. The associated class file will need revision in order to make these pages generate with the correct formatting.

Added: 2008/01/23, Resolved: 2011/07/12 At present the rpctemplate.tex will not be a function template. This can be developed later on an as needed basis. The intended difference between the two templates is that the `ptotemplate` is a thesis based on the publication option whereas the `rpctemplate` is a thesis based on the report class and not based on separately generated publication- formatted manuscripts.

2   Hints for Final Edit Stage

The last stages of editing a thesis often come down to treating widow and orphan lines. The following are hints for addressing these final issues:

- Use `\enlargethispage{\baselineskip}` command.

- Add a `\newpage` command to force the start of a new page at a specific point.

- LaTeX has a parameter for 'penalty' for widows and orphans ('club lines' in LaTeX terminology). With the greater penalty LaTeX will try more to avoid widows and orphans. You can try to increase these penalties by putting following commands in your document preamble: `\widowpenalty=300\clubpenalty=300`. If this does not help, you can try increasing these values even more, to a maximum of 10000. However, it is not recommended to set this value too high, as setting it to 10000 forbids LaTeX from doing this altogether, which might result in strange behavior.

- Although I have not tested this, Wikipedia suggests it also helps to have rubber band values for the space between paragraphs: `\setlength{\parskip}{3ex plus 2ex minus 2ex`

3   LaTeX Template for Standard Report Class Thesis

3.1   Description

This template represents a thesis generated as a single report class document.

I have used the `chapter` and `chapter*` commands to produce both chapter titles and titles for the frontmatter and backmatter. In my opinion this is the easiest and most transparent method to produce absolutely uniform type and layout. The thesis style files that I received tried to accomplish this using

custom defined commands but the result was not satisfactory, in my opinion. The `chapter*` command produces no numbering, which is in fact true for any of the sectioning commands.

One change which you, as a user, may wish to make is in the relative locations of the files. For LaTeX all relative file locations have to be given with respect to the file that will be compiled by LaTeX. Thus, if it is desired to have chapter files in sub-directories of the directory containing the base `*.tex` file, the include commands will need to be of a form such as `\include{subdir/foo.tex}`. This same logic also applies to the locations used to specify the *.eps files in each of the chapter's `*.tex` files.

The contents of `template.tex` are expected to be rather transparent. The only thing that may be worth further explanation is the use of the `include` and `includeonly` commands instead of `input`. The reason is that the include/includeonly combination allows one to conditionally load the files. This can save time when only one chapter, or portion of the thesis, is begin worked on at a given time. The only danger to this approach is that if a given chapter is not part of the include only list, then its impact on pagination, lists of figures, tables, etc will be frozen. A final run with all of the include files part of of the includeonly list will ensure a complete document.

3.2 Thesis Template

3.2.1 Preamble

```
⟨∗rpc⟩
% -*- mode: LaTeX -*-
% ... preamble ...
\documentclass[times,12pt,titlepage]{mstogs}
\doublespacing
% ... bibliography/reference list citations - natbib package ...
% for numerical listings in order of citation: numbers option
%     and bibliographystyle = unsrtnat, or mstogs-num.
% for alphabetical listings in author-year format: authoryear option
%     and bibliographystyle = plainnat, or mstogs-auy.
\usepackage[numbers,sort]{natbib} % see natbib package documentation

\setlength{\bibhang}{0.5in}
\usepackage{threeparttable}
\usepackage[final]{graphicx}
\usepackage{psfrag}
\usepackage[noprefix]{nomencl}
\makenomenclature
% ... nomenclature groupings ...
\renewcommand{\nomgroup}[1]{
   \ifthenelse{\equal{#1}{A}}{\medskip \item \textbf{Roman}}{}%
   \ifthenelse{\equal{#1}{G}}{\medskip \item \textbf{Greek}}{}%
   \ifthenelse{\equal{#1}{S}}{\medskip \item \textbf{Subscripts}}{}%
}
```

```
 % ... nomenclature preamble ...
\renewcommand{\nompreamble}{%
\hspace*{-0.50in}\makebox[1.0in][l]{Symbol} Description}
\renewcommand{\nomlabelwidth}{1.0in}

\usepackage[nopar]{lipsum} % ... provides dummy text ...

 % ... end preamble ...

\begin{document}
```

3.2.2   Title Page

```
 % ... specify: ms or phd ...

\begin{ThesisTitlePage}{phd}

 % ... title page info ...

\author{\MakeUppercase{Full Legal Name}}

\thesistitle{\MakeUppercase{The Title of My Work}}

\department{Mechanical Engineering}

 % ... thesis committee ...

\ThesisAdvisor{Ludwig Prandtl, Advisor\\ Joe Miner, Co-Advisor}

\ThesisCommittee{%
Daniel Bernoulli\\ %
Leonard Euler\\ %
Pierre-Simon Laplace\\ %
Joseph Fourier}

 % ... Graduation date - NOT your submission date ...
\graddate{1685}

\end{ThesisTitlePage}
```

3.2.3   Copyright, Abstract, and Acknowledgements

```
 % ... copyright page - true|false ...

\copyrightyear{1685}
\ThesisCopyrightPage{true}

 % ... front matter - thesis abstract ...

\begin{ThesisAbstract}
\lipsum[1]
```

```
\end{ThesisAbstract}

 % ... front matter - thesis acknowledgements ...

\begin{ThesisAcknowledgment}
\lipsum[2-3]
\end{ThesisAcknowledgment}
```

3.2.4   Contents, Illustrations, Tables and Symbols

```
\begin{ThesisFrontMatter}
\tableofcontents
\listoffigures
\listoftables
\listofsymbols{false}
\end{ThesisFrontMatter}
```

3.2.5   Thesis Body

```
\begin{ThesisBody}

 % ... introduction chapter ...
\ThesisBodyChapter{Introduction}\input{chpone}
 % ... chapter ...
\ThesisBodyChapter{Literature Review}\input{chptwo}
 % ... chapter ...
\ThesisBodyChapter{First Contribution With a Long and Complicated Title But
  No Citations or Nomenclature}\input{chpthree}
 % ... chapter ...
\ThesisBodyChapter{Second Contribution}\input{chpfour}
 % ... conclusions chapter ...
\ThesisBodyChapter{Conclusions}\input{chpfive}

\end{ThesisBody}
```

3.2.6   Appendix

```
 % ... appendix - specify number of appendix chapters ...

\begin{ThesisAppendix}{two}{false}{false}
\ThesisAppendixChapter{An Appendix Title}\input{apxone}
\ThesisAppendixChapter{The Second Appendix Title}\input{apxtwo}
\end{ThesisAppendix}
```

3.2.7   Back Matter - References and Vita

```
%% ... references - comma separated list of bib files ...
%% Note - the template uses the natbib package, all of the
%%        following packages are natbib compatible
%% unsrtnat -> order of citation listings, use numbers option
%% mstogs-num -> use numbers option, OGS-specified formatting
```

```
%% plainnat -> alphabetical citation listings, use authoryear option
%% mstogs-auy -> use authoryear option, OGS-specified formatting
%% ieetr -> widely used formatting style

\begin{ThesisBibliography}{REFERENCES}
%\newpage
 \bibliographystyle{unsrtnat}
% \bibliographystyle{mstogs-num}
% \bibliographystyle{plainnat}
% \bibliographystyle{mstogs-auy}
% \bibliographystyle{ieeetr}

\singlespacing
\bibliography{add}
\end{ThesisBibliography}

 % ... vita ...

\begin{Vita}
\lipsum[4-5]
\end{Vita}

\end{document}
⟨/rpc⟩
```

4   LaTeX Template for Publication Thesis Option

4.1   Using the Template

The steps in using the Publication Thesis Option template are the following

1. In each `ppr.tex` file, change the class options in the documentclass command to `\documentclass[times,thesis]{journal}` where *journal* is the name of the journal the paper formatted for. Once the class options have been changed, re-make the file. This should produce a postscript file with margins and pagination obeying the thesis requirements.

2. In each `ppr.tex` file, add the following command `\setcounter{page}{x}` immediately following the `\begin{document}` command, where x is the starting page number for the corresponding paper. Now re-make each of the `ppr.tex` files. The result should be a thesis body with each of the papers consituting it numbered consecutively.

3. Edit the thesis.tex template by entering the correct paper names and so on. Compile the thesis template with the make command. Make sure the pagination for the table of contents entries with the thesis body are correct. Note that in the template, the setcounter command will need to be issued with the correct page number corresponding to each individual paper.

4. Add (or uncomment) the `\nofiles` command to the template immediately preceding the `\begin{document}` command. This command prevents LaTeX from writing any changes to the `.toc`,`.lof`,`.lot` files.

5. Add the entire contents from each `ppr.lof` and `ppr.lot` to the corresponding template `.lof` or `.lot` file, at the appropriate place in these files. Then recompile the template and be sure the the list of figures and list of tables entries generated are correct.

6. Now, go back to the individual `ppr.tex` files and add the `\tableofcontents` command to each and re-make them. Now copy the contents of each of these individual `.toc` files to the `.toc` file of the thesis template. Re-make the thesis.

7. Print out the `ppr.ps` files and the `thesis.ps` files, put them in order and you have a complete thesis.

4.2 Additional Notes and Hints

- If the bibliography in an individual entry needs to be edited directly, edit the `ppr.bbl` file but make sure not to re-run the bibtex command because otherwise the changes will be overwritten.

- The `nofiles` command cannot be used in the individual `ppr.tex` files since otherwise the nomenclature is not generated.

- In the thesis list of tables and list of illustrations, only an abbreviated caption should appear. This can be accomplished by editing the `.lof` and `.lot` files. Preferably, however, it can be accomplished by using the following form of the caption command: `\caption[lst_entry]{heading}` where `lst_entry` is the abbreviated entry which is to appear in the list of figures or tables. This can be the first sentence of the extended caption or an even more abbreviated version.

- The individual entries in the list of figures and tables for each paper must be set off by the following `\noindent\mbox{PAPER 1\hfill}\nopagebreak`. This should be added to the `.lot` and `.lof` files.

- The block of entries the `.toc` must also be set off by a command identical to the above. In addition, this should be preceded by `\addvspace{\baselineskip}`.

- The list of figures and tables must also have single-spaced entries with doublespacing between the entries. A way to accomplish this is to put the `\singlespacing` command as the second line of the `.lot` and `.lof` files and add, immediately in front of each contentsline command, the following: `\addvspace{\baselineskip}`. This same command will need to be added in front of each of the above Paper x commands so that there is a blank line between the last entry of one paper and the line that says `Paper x+1`.

- The entries in the table of contents must also be single spaced for each entry and double-spaced between. However, it is easier to just let the table of contents be double-spaced and then put an individual table of contents inside a singlespacing environment, if it requires more than one line.

4.3 Thesis Template

4.3.1 Preamble

The preamble is ended by the `\begin{document}` command.

```
⟨∗pto⟩
% -*- mode: LaTeX -*-
% ... preamble ...
\documentclass[times,12pt,titlepage]{mstogs}

% ... additions to ptotemplate ...
\usepackage[authoryear,sort]{natbib} % ... authoryear or numbers ...
\setlength{\bibhang}{0.5in}
\usepackage{docmute}
\usepackage{graphicx}
\usepackage{psfrag}
\usepackage{threeparttable}
\usepackage[noprefix]{nomencl}
  \setlength{\nomitemsep}{\parsep}
  \makenomenclature
\usepackage[sectionbib]{chapterbib}

\bibliographystyle{plainnat}
%\bibliographystyle{mstogs-auy}

% ... end of additions to ptotemplate ...

\doublespacing
\usepackage[nopar]{lipsum}

% ... uncomment after editing toc, lof, lot ...

%\nofiles

% ... end preamble ...

\begin{document}
```

4.3.2 Title Page

```
% ... specify: ms | phd ...
```

```
\begin{ThesisTitlePage}{phd}

\author{\MakeUppercase{Full Legal Name}}

\thesistitle{\MakeUppercase{The Title of My Work}}

\department{Mechanical Engineering}

 % ... thesis committee ...

\ThesisAdvisor{Ludwig Prandtl, Advisor\\ Joe Miner, Co-Advisor}

\ThesisCommittee{%
Daniel Bernoulli\\ %
Leonard Euler\\ %
Pierre-Simon Laplace\\ %
Joseph Fourier}

 % ... Graduation date.  NOT your submission date! ...
\graddate{1685}

\end{ThesisTitlePage}
```

4.3.3   Copyright, Abstract and Acknowledgements

```
 % ... copyright page - true|false ...

\copyrightyear{1685}
\ThesisCopyrightPage{true}

 % ... front matter - publication option - ms|phd...

\begin{ThesisPublicationOption}{phd}
  This \ThesisDissertationType\ consists of the following three
  articles, formatted in the style used by the Missouri University of
  Science and Technology.

  Paper I: Pages x-xx have been submitted to ABC Journal. Lorem ipsum
  dolor sit amet, consectetuer adipiscing elit. Ut purus elit,
  vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur
  dictum gravida mauris.

  Paper II: Pages x-xx are intended for submission to XYZ
  Journal. Lorem ipsum dolor sit amet, consectetuer adipiscing
  elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae,
  felis. Curabitur dictum gravida mauris.

  Paper III: Pages x-xx have been accepted by 123 Journal. Lorem ipsum
  dolor sit amet, consectetuer adipiscing elit. Ut purus elit,
  vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur
```

```
  dictum gravida mauris.

 \end{ThesisPublicationOption}

 % ... front matter - thesis abstract ...

\begin{ThesisAbstract}
\lipsum[1]
\end{ThesisAbstract}

 % ... front matter - acknowledgements ...

\begin{ThesisAcknowledgment}
\lipsum[2-3]
\end{ThesisAcknowledgment}
```

4.3.4   Contents, Illustrations, Tables and Symbols

```
 % ... toc, lof, and lot (list of symbols in respective papers) ...
\begin{ThesisFrontMatter}
\tableofcontents
\listoffigures
\listoftables
\listofsymbols{false}
\end{ThesisFrontMatter}
```

4.3.5   Thesis Body

```
 % ... introduction chapter ...

\begin{ThesisBody}

\begin{ThesisOnlyChapters}{false}{false}
\setboolean{firstThesisOnlyChapter}{false} % ... SECTION not printed ...
\ThesisBodyChapter{Introduction}\input{chpone}
\ThesisBodyChapter{Literature Review}\input{chptwo}
\end{ThesisOnlyChapters}

 % ... thesis publications ...
 % Note for PaperManuscript command:
 % #2 argument is true/false for presence of figures/illustrations
 % #3 argument is true/false for presence of tables

\begin{ThesisPublications}
\PaperManuscript{I}{true}{true}{FIRST PAPER WITH NO REFERENCES BUT %
   REALLY LONG TITLE IN ORDER TO BE SURE IT IS CORRECTLY FORMATTED}
  \cbinput{pprone}
\PaperManuscript{II}{true}{true}{SECOND PAPER TITLE}%
  \cbinput{pprtwo}
\PaperManuscript{III}{true}{true}{THIRD PAPER TITLE}%
```

```
  \cbinput{pprthree}
\end{ThesisPublications}

% ... conclusions chapter ...

\begin{ThesisOnlyChapters}{true}{true}
\ThesisBodyChapter{Unpublished Content}\input{chpthree}
\ThesisBodyChapter{Summary and Conclusions}\input{chpfive}
\end{ThesisOnlyChapters}

\end{ThesisBody}
```

4.3.6 Appendix

```
% ... appendix - specify number of appendix chapters ...

\begin{ThesisAppendix}{two}{false}{false}
\ThesisAppendixChapter{An Appendix Title}\input{apxone}
\ThesisAppendixChapter{The Second Appendix Title}\input{apxtwo}
\end{ThesisAppendix}
```

4.3.7 Back Matter - References and Vita

```
% ... references - comma separated list of bib files ...

\begin{ThesisBibliography}{REFERENCES}
\singlespacing
\bibliography{add}
\end{ThesisBibliography}

% ... vita ...

\begin{Vita}
\lipsum[4-5]
\end{Vita}

% ... end document ...

\end{document}
⟨/pto⟩
```

5   LaTeX Templates for Generic Chapter Content

5.1   Minimal (text-only) Chapter Template

⟨*chapmin⟩

```
%% ... sample chapter ...

\lipsum[6]
```

```
\section{A SECOND-LEVEL HEADING}
\lipsum[7-9]

\subsection{A Third-Level Heading}
\lipsum[10]
\subsubsection{A fourth-level heading with a very long and complicated title
to once again verify the formatting}
\lipsum[10-12]
\subsubsection{Another fourth-level heading}
\lipsum[10-12]

\subsection{Another Third-Level Heading but with a Very Long and
  Complicated Title to Verify the Formatting}
\lipsum[13-15]

\section{Discussion Using a Second-Level Heading
  Which is Really Long So That It Produces a Two-Line
  Toc Entry}
\lipsum[10-12]
```

⟨/chapmin⟩

6 LaTeX Templates for Generic Paper Content

6.1 Minimal (text-only) Paper Template

```
⟨*pprmin⟩
% ... preamble ...
\documentclass{article}
\usepackage[nopar]{lipsum}
\usepackage{graphicx}
\usepackage{threeparttable}

\newcommand{\ThesisPaperAuthor}[1]{\title{#1}}
\newenvironment{ThesisPaperAbstract}{\begin{abstract}}{\end{abstract}}
\newcommand{\ThesisPaperKeywords}[1]{\textbf{Keywords:} #1}

\begin{document}

% ... title page ...

\ThesisPaperAuthor{%
 I.\ M.\ Author\\%
 Department of Mechanical \& Aerospace Engineering\\
 Missouri University of Science and Technology\\
 Rolla, Missouri 65409--0050\\
 Tel: 573--341--6622, Fax: 573--341--4115\\
 Email: imauthor@mst.edu%
}
```

```
 % ... abstract ...

\begin{ThesisPaperAbstract}
\lipsum[50-52]
\end{ThesisPaperAbstract}

 % ... keywords ...

\ThesisPaperKeywords{convection}

 % ... nomenclature - do not edit ...

%\frontglossary

 % ... introduction ...

\section{INTRODUCTION}

\lipsum[52-55]

\section{A First-Level Heading in a Paper Which is Really
Long So That It Produces a Two-Line Toc Entry}
\lipsum[7-9]

\subsection{A SECOND-LEVEL HEADING IN A PAPER}
\lipsum[10]
\subsubsection{A Third-Level Heading in a Paper with a Very Long and
  Complicated Title to Once Again Verify the Formatting}
\lipsum[10-12]
\subsubsection{Another Third-Level Heading in a Paper}
\lipsum[10-12]
\paragraph{A fourth-level heading in a paper with a very long and complicated
  title to verify the formatting}
\lipsum[20]
\paragraph{Another fourth-level heading}
\lipsum[21]


\subsection{ANOTHER SECOND-LEVEL HEADING IN A PAPER WITH
A VERY LONG AND COMPLICATED TITLE TO VERIFY THE FORMATTING}
\lipsum[13-15]

 % ... formulation ...

\section{Problem Formulation}%
  \label{sec:formulation}
\lipsum[56]

\subsection{GOVERNING EQUATIONS}
```

14

```
This is my simple equation
\begin{equation}
\delta_i = \sqrt{\nu t}
\end{equation}
where $\delta$ is the boundary layer thickness for Stokes' first
problem. %
\lipsum[57-60]

Figure~\ref{fig:fig01} %
\begin{figure}[t]
  \begin{center}
  \includegraphics[width=3.75in]{simple.pdf}
  \end{center}
  \caption{The caption of the figure.}
\label{fig:fig01}
\end{figure}
illustrates the implementation of a very simple
figure. \lipsum[61-65].

Tables, such as Table~\ref{tbl:tbl01}, %
\begin{table}[t]
  \caption{The caption of the table should use capitalization
    consistent with that of the figures.}
  \label{tbl:tbl01}
  \begin{center}
  \begin{tabular}{c l l}
  \hline
  Example & Time & Cost \\
  \hline
  1 & 12.5 & \$1,000 \\
  2 & 24 & \$2,000 \\
  \hline
  \end{tabular}
  \end{center}
\end{table}
should appear in the order of their citation and should
generally appear at the top of the page in a final manuscript.
\lipsum[66-70]

 % ... results ...

\section{Results and Discussion} \label{sec:results}
\lipsum[71-80]

 % ... conclusions ...

\section{Conclusions}
\lipsum[81-85]
```

```
% ... acknowledgments ...

\section*{Acknowledgements}
\addcontentsline{toc}{section}{Acknowledgements}
\lipsum[2]

% ... references - bib files ...

%\bibliographystyle{plainnat}
%\ThesisPaperReferences{add}

% ... end ...

\end{document}
```

⟨/pprmin⟩

6.2 Paper Template with Bibliography Citations

⟨∗pprbib⟩

```
% ... preamble ...
\documentclass{article}

\usepackage[nopar]{lipsum}
\usepackage{graphicx}
\usepackage{setspace}
\usepackage{threeparttable}
\usepackage[numbers]{natbib}
\setlength{\bibhang}{0.5in}

\newcommand{\ThesisPaperAuthor}[1]{\title{#1}}
\newenvironment{ThesisPaperAbstract}{\begin{abstract}}{\end{abstract}}
\newcommand{\ThesisPaperKeywords}[1]{\textbf{Keywords:} #1}
\newenvironment{ThesisPaperBibliography}{}{}
\newcommand{\ThesisPaperReferences}[1]{\bibliography{#1}}

\begin{document}

% ... title page ...

\ThesisPaperAuthor{%
I.\ M.\ Author\\%
Department of Mechanical \& Aerospace Engineering\\
Missouri University of Science and Technology\\
Rolla, Missouri 65409--0050\\
Tel: 573--341--6622, Fax: 573--341--4115\\
Email: imauthor@mst.edu%
}

%\date{}
```

```
%\maketitle

 % ... abstract ...

\begin{ThesisPaperAbstract}
\lipsum[52-55]
\end{ThesisPaperAbstract}

 % ... keywords ...

\ThesisPaperKeywords{convection}

 % ... introduction ...

\section{Introduction}

\lipsum[52-55]

 % ... formulation ...

\section{Problem Formulation}

\lipsum[56]
\subsection{GOVERNING EQUATIONS}

This is my simple equation
\begin{equation}
\delta_i = \sqrt{t/\mathrm{Pe}}
\end{equation}
where $\delta$ is the thermocline
thickness %
defined previously by \citep{winkle.1991} and
\citet{bullwinkle.1990}. \lipsum[57-60]

Figure~\ref{fig:fig01} %
\begin{figure}[t]
%  \psfrag{x}{\paxis{$x$}}
%  \psfrag{y}{\paxis{$y$}}
  \begin{center}
  \includegraphics[width=3.75in]{simple.pdf}
  \end{center}
  \caption{The caption of the figure.}
\label{fig:fig01}
\end{figure}
illustrates the implementation of a very simple figure. \lipsum[61-65]

The inclusion of tables, such as Table~\ref{tbl:tbl01}, is just as
straigtforward. %
\begin{table}[t]
```

```
  \caption{The caption of the table should use capitalization
    consistent with that of the figures.}
  \label{tbl:tbl01}
  \begin{center}
  \begin{tabular}{c l l}
  \hline
  Example & Time & Cost \\
  \hline
  1 & 12.5 & \$1,000 \\
  2 & 24 & \$2,000 \\
  \hline
  \end{tabular}
  \end{center}
\end{table}
Tables should appear in the order of their citation and should
generally appear at the top of the page in a final manuscript.
\lipsum[66-70]

% ... results ...

\section{Results and Discussion}

\lipsum[71-75]

\lipsum[76-80]

% ... conclusions ...

\section{Conclusions}

\lipsum[81-85]

\lipsum[86]

% ... acknowledgments ...

\section*{Acknowledgements}
\addcontentsline{toc}{section}{Acknowledgements}
\lipsum[87]

% ... references - bib files ...

\begin{ThesisPaperBibliography}{REFERENCES}
  \bibliographystyle{unsrtnat}
  %\bibliographystyle{mstogs-num}
\singlespacing
\ThesisPaperReferences{add}
\end{ThesisPaperBibliography}

% ... end ...
```

```
\end{document}
```

⟨/pprbib⟩

6.3 Paper Template with All Content Elements

```
⟨∗pprall⟩
 % ... preamble ...
\documentclass{article}

\usepackage[nopar]{lipsum}
\usepackage{graphicx}
\usepackage{threeparttable}
\usepackage{setspace}
\usepackage[numbers]{natbib}
\setlength{\bibhang}{0.5in}
\usepackage[noprefix]{nomencl}
  \setlength{\nomitemsep}{\parsep}
  \makenomenclature

\newcommand{\ThesisPaperAuthor}[1]{\title{#1}}
\newenvironment{ThesisPaperAbstract}{\begin{abstract}}{\end{abstract}}
\newcommand{\ThesisPaperKeywords}[1]{\textbf{Keywords:} #1}
\newenvironment{ThesisPaperBibliography}{}{}
\newcommand{\ThesisPaperReferences}[1]{\bibliography{#1}}

\begin{document}

 % ... title page ...

%\title{%
%THE TITLE%
%\thanks{\LaTeX'd \today.}%
%}

\ThesisPaperAuthor{%
 I.\ M.\ Author\\%
 Department of Mechanical \& Aerospace Engineering\\
 Missouri University of Science and Technology\\
 Rolla, Missouri 65409--0050\\
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}

%\date{}

%\maketitle

 % ... abstract ...
```

```
\begin{ThesisPaperAbstract}
\lipsum[50]
\end{ThesisPaperAbstract}

 % ... keywords ...

\ThesisPaperKeywords{convection}

 % ... nomenclature - do not edit ...

% \frontglossary

 % ... introduction ...

\section{Introduction}
\lipsum[51-55]

 % ... formulation ...

\section{Problem Formulation}

\lipsum[56]

\subsection{GOVERNING EQUATIONS}

This is my simple equation
\begin{equation}
\delta_i = \sqrt{t/\mathrm{Pe}}
\end{equation}
where $\delta$ is the thermocline
thickness %
\nomenclature[at]{$t$}{time}%
\nomenclature[gd]{$\delta$}{thermocline thickness, a variable definition
  with a really long description to verify formatting}%
\nomenclature[si]{$i$}{inlet}%
defined previously by \citep{winkle.1991} and
\citet{bullwinkle.1990}. \lipsum[57-60]

Figure~\ref{fig:fig01} %
\begin{figure}[t]
%  \psfrag{x}{\paxis{$x$}}
%  \psfrag{y}{\paxis{$y$}}
  \begin{center}
  \includegraphics[width=3.75in]{simple.pdf}
  \end{center}
  \caption{The caption of the figure.}
\label{fig:fig01}
\end{figure}
\lipsum[61-65].
```

```latex
Tables, such as Tables~\ref{tbl:tbl01} and \ref{tbl:tbl02}, %
\begin{table}[t]
  \caption{The caption of the table uses sentence capitalization.}
  \label{tbl:tbl01}
  \begin{center}
  \begin{tabular}{c l l}
  \hline
  Example & Time & Cost \\
  \hline
  1 & 12.5 & \$1,000 \\
  2 & 24 & \$2,000 \\
  \hline
  \end{tabular}
  \end{center}
\end{table}
should appear in the order of their citation and should
\begin{table}[t]
\begin{threeparttable}
  \caption{The caption of the table uses sentence capitalization.}
  \label{tbl:tbl02}
  \begin{center}
\begin{tabular*}{\textwidth}{c l l} % or {tabular}
  \hline
  Example & Time\tnote{1} & Cost \\
  \hline
  1 & 12.5 & \$1,000 \\
  2 & 24 & \$2,000 \\
  \hline
\end{tabular*}
\begin{tablenotes}
  \item [1] The first note.
\end{tablenotes}
  \end{center}
\end{threeparttable}
\end{table}
generally appear at the top of the page in a final manuscript.
\lipsum[66-70]

 % ... results ...

\section{Results and Discussion}
\lipsum[71-80]

 % ... conclusions ...

\section{Conclusions}
\lipsum[81-85]

 % ... acknowledgments ...
```

```
\section*{Acknowledgements}
\addcontentsline{toc}{section}{Acknowledgements}
\lipsum[86]

 % ... nomenclature - do not edit ...

%\backglossary

 % ... references - bib files ...

\begin{ThesisPaperBibliography}{REFERENCES}
  \bibliographystyle{unsrtnat}
  %\bibliographystyle{mstogs-num}
\singlespacing
\ThesisPaperReferences{add}
\end{ThesisPaperBibliography}

 % ... end ...

 \end{document}
```

⟨/pprall⟩

6.4 Minimal (text-only) Appendix Template

⟨∗apxmin⟩

```
 %% ... sample chapter ...

\section{A First-LEVEL Appendix HEADING}
\lipsum[7-9]

\subsection{A Second-Level Appendix Heading}
\lipsum[10]
\subsubsection{A Third-Level Appendix Heading with a Very Long and
  Complicated Title to Once Again Verify the Formatting}
\lipsum[10-12]
\subsubsection{Another Third-Level Appendix Heading}
\lipsum[10-12]
\paragraph{A fourth-level appendix heading with a long and complicated title
to once again verify the formatting}
\lipsum[13-15]

\subsection{Another Second-Level Appendix Heading but with a
Very Long and Complicated Title to Verify the Formatting}
\lipsum[13-15]

\section{Discussion Using a First-Level Appendix Heading
  Which is Really Long So That It Produces a Two-Line
```

```
   Toc Entry}
\lipsum[10-12]
```

⟨/apxmin⟩

6.5   Content with Figures

```
⟨∗addfig⟩
\section{Content with Figures}
\lipsum[10]

\subsection{Floats with Figures}

\lipsum[12-13]

\subsubsection{Simple Figure with Label}

\lipsum[11]

Add a simple figure, Figure~\ref{fig:fig00}, to illustrate
an entry in the list of figures. %
\begin{figure}[tb]
  \begin{center}
   \includegraphics[width=3.75in]{simple.eps}
  \end{center}
  \caption{The caption of the figure.}
\label{fig:fig00}
\end{figure}%
\lipsum[12]

\subsubsection{Figure with psfrag replacement}

\lipsum[13].  Figure~\ref{fig:fig01} illustrates the use
of the psfrag package to place \LaTeX\ math in a graphic.%
\begin{figure}[tb]
  \psfrag{x}{$x$}
  \psfrag{y}{$y$}
  \begin{center}
   \includegraphics[width=3.75in]{simple.eps}
  \end{center}
  \caption[A figure caption which is extra long.]{A figure caption
    which is extra long. This long caption not only demonstratees that
    the required spacing in the list of figures is correct, but also
    the general practice of making the list of figures (or tables)
    entry the first sentence of the caption.}
\label{fig:fig01}
\end{figure}
\lipsum[14]. The filler content is followed by a second figure,
Figure~\ref{fig:fig02}.  %
\begin{figure}[tb]
```

```
  \psfrag{x}{$\hat{x}/L$}
  \psfrag{y}{$y$}
  \begin{center}
   \includegraphics[width=3.75in]{simple.eps}
  \end{center}
  \caption{The figure caption made extra long so that the
    required spacing in the list of figures is evident.}
\label{fig:fig02}
\end{figure}
\lipsum[15]

\subsection{A Bit More Discussion}
\lipsum[16-19]
```

⟨/addfig⟩

6.6 Content with Tables

⟨∗addtbl⟩
```
\section{Content with Sample Tables}

\lipsum[15]

\subsection{Floats with Tables}

\lipsum[16]

\subsubsection{Simple table}

Finally the tables, Table~\ref{tbl:tbl01} illustrates the syntax of a
basic table. %
\begin{table}[tb]
  \caption{The capitalization of the table should match that of figures.}
  \label{tbl:tbl01}
  \begin{center}
  \begin{tabular}{c l l}
  \hline
  Example & Time & Cost \\
  \hline
  1 & 12.5 & \$1,000 \\
  2 & 24 & \$2,000 \\
  \hline
  \end{tabular}
  \end{center}
\end{table}
\lipsum[16-18]

\subsubsection{Three-part table example}

Table~\ref{tbl:tbl02}, which illustrates the syntax of a three-part
```

```
table which includes table notes in addition to a caption and table
body.
\begin{table}[tb]
\begin{threeparttable}
  \caption{The caption of the three-part table.}
  \label{tbl:tbl02}
  \begin{center}
\begin{tabular*}{\textwidth}{c l l} % or {tabular}
  \hline
  Example & Time\tnote{1} & Cost \\
  \hline
  1 & 12.5 & \$1,000 \\
  2 & 24 & \$2,000 \\
  \hline
\end{tabular*}
\begin{tablenotes}
  \item [1] The first note.
\end{tablenotes}
  \end{center}
\end{threeparttable}
\end{table}
\lipsum[19-21]

\subsection{One More Thing}
\lipsum[22-25]
⟨/addtbl⟩
```

6.7   Content with `natbib` Citations

⟨∗addbib⟩

```
\section{Content with \texttt{natbib} Citations}

This had been discussed previously by \citep{winkle.1991} and
\citet{bullwinkle.1990}. \lipsum[22-25]
```

⟨/addbib⟩

6.8   Content with `nomencl` Entries

⟨∗addglo⟩

```
\section{Content with \texttt{nomencl} Entries}

Finally, we add a simple equation to illustrate the use of the nomencl
 package for automatic generation of a list of symbols.
\begin{equation}
\delta_i = \sqrt{t/\mathrm{Pe}}
\end{equation}
where $\delta$ is the layer
thickness %
```

```
\nomenclature[at]{$t$}{time}%
\nomenclature[gd]{$\delta$}{layer thickness}%
\nomenclature[si]{$i$}{inlet}%
as defined previously. \lipsum[26-30]
⟨/addglo⟩
```