REFERENCE GUIDE FOR THE CSM THESIS
\LaTeX \ TEMPLATE

by
A fellow Graduate Student
4.7 Acknowledgments (Optional) .................................................... 12
4.8 Dedication (Optional) ........................................................... 12

CHAPTER 5 BODY MATTER ......................................................... 13
5.1 Section Structure ................................................................. 13
  5.1.1 Chapter Titles ............................................................... 13
  5.1.2 Headings and Subheadings .............................................. 13
  5.1.3 Math Mode in Sections, Titles and other Bookmarks ............. 14
5.2 Figures and Tables .............................................................. 14
5.3 Labeling and Referencing .................................................... 15

CHAPTER 6 BACK MATTER ......................................................... 16
6.1 References .............................................................................. 16
  6.1.1 Bibtex ............................................................................. 16
6.2 Hyperref and Cite packages .................................................. 16
6.3 Bibliography ........................................................................... 16
6.4 Appendices ............................................................................. 17
6.5 Supplemental Files ............................................................... 17

CHAPTER 7 MORE ON FIGURES .................................................... 18
7.1 Standard way .......................................................................... 18
7.2 Build in function .................................................................... 18
  7.2.1 Long Caption .................................................................. 19
7.3 Large Figures .......................................................................... 19

CHAPTER 8 MORE ON TABLES ...................................................... 20
8.1 Standard way .......................................................................... 20
8.2 Large Tables ........................................................................... 20
8.3 Multi-page Tables .................................................................... 21

CHAPTER 9 OTHER USEFUL INFORMATION ..................................... 22
9.1 Running the Template ............................................................ 22
9.2 Hyperref ......................................................... 22
9.3 Included Packages ............................................. 22
CHAPTER 1
INTRODUCTION

This document was put together to explain the functionality of the CSM \LaTeX{} Thesis template, set by the 'csm-\ldots-.sty' files. The underlying code in the .sty files should not need any editing unless specified in this document. Please be sure to look through this document before attempting to make your own adjustments to the code.

Also read along the comments made in the example \LaTeX{} .tex files to follow what you should do in some section. Please note that this Thesis Template made to work with pdf\LaTeX{} and not optimized for any other Tex building tools. You may try to use it but there is no guarantee it will work without any issues.

This guide starts with an Easy Starters Guide. This chapter focus on helping you get started such that you can go and get to writing as quickly as possible. This chapter is meant for people that are new to \LaTeX{} and still need guidance on setting up a project. The best way to get started is through Overleaf, and online \LaTeX{} building tool.

After that there are notes on some of the General Formatting Guidelines, Front Matter, Body Matter, Back Matter. In these chapters the Graduate Students (OGS) thesis guidelines are presented in italics I have also stated if these parameters are set by the template (most are), if they required user input, or state option for you to change if you wish (font size, line spacing).

There are two chapters that focus on Figures and Tables more closely as they can be difficult to format. The biggest thing that these chapters could be useful for are the landscape mode figures and tables, or multi-page tables. The last chapter has more on some of the package requirements in the template if you wish to see that.

This user manual is not here to teach you \LaTeX{}, be sure to go to the internet for any pressing questions you hold that are not addressed here. You might find it useful to make a copy of the example dissertation files for later reference. I hope you find this manual useful.

1.1 A Quick Note About the Author

The template and guide where made as part of a 'Template Competition'. I am a current Graduate Student of the physics department, and though it would be fun to give this a try. I based a lot the the code off of a 'unofficial' template that has been around for several year, written by Erich E. Hoover and his colleagues. I want to point out that I have dyslexia, and there are good possibilities that the text in this reference manual or the template might have sever spelling mistakes or just poor grammar. My apologies in advance, I hope you still find all of the useful.

I hope you enjoy the writing process

- Claudia A.M. Schrama
CHAPTER 2
EASY STARTERS GUIDE

If you are new to \LaTeX and are not sure where to start then this chapter is for you.

2.1 Before you start

This guide assumes that you have at least one way to build \LaTeX files with pdfLaTex. For people that consider themselves a ‘beginner’ with \LaTeX I advise you to start writing your document in Overleaf.

If you are better versed with \LaTeX then you may skip this chapter and start by looking through the 'mines-example-dissertation.tex' and the next chapters of this guide.

2.2 Uploading To Overleaf

To start off you should have an Overleaf account. You can put it either under your personal or mines email. The free account is more than enough for you to get started. Once you have logged in you get a screen that looks like the image below, minus the list of projects that I have.
Now to start a new project press the 'New Project' button in the top left corner of the screen. The left menu in Figure 2.1 will appear.

Click the 'Upload Project' button, third from the top, the next pop-up input screen asks you to select or drop a '.zip' file (right in Figure 2.1). Here upload the zip file for the Example Dissertation that you have downloaded from the Mines Website.

The project will open, here is what it looks like for me when I open the project,

Now the first time you open the project you might need to set which file to use to make the pdf that you see on the right. You know you have to do this if no pdf pops up in the right panel. To make sure the document compiles properly go over to the left side of the page and click 'Menu' in to top left corner. You get the menu in Figure 2.2
Go to the tab that reads 'Main document' and make sure that it is set to the 'mines-example-dissertation.tex'. Once the main document is set, any time you press to 'Recompile' button above the pdf section, it will re-compile the main document. Now your Overleaf document is setup for you to start working on it, and make your own document.

Note you may change the name of the main document (rename it), make sure that the compiler is looking for your document by setting it as the main document as you just did for my example file.

Now you can take a look around the example dissertation. Notice that there are three panels. The left panel is the place where you can locate all the files for you chapters, figures, and other places. The center panel is where you can edit the tex files. The right panel shows the current pdf version of you dissertation.

2.3 Personalizing the Document

In the 'mines-example-dissertation.tex' there are some section which require user input.

\texttt{\textbf{\texttt{\textcolor{red}{title}}}} Add your own title in the title section, and add two back slashed to end the lines such that your title looks like an upside down pyramid. This just means that the top line is the longest, and the lines get shorter the further you go down.
\textbf{\degreeitle} State weather you are getting a Masters of Science or a Doctor of Philosophy.

\textbf{\discipline} Note the Area of Your Research, eg. Applied Physics

\textbf{\department} Note the Department you are going the research for, eg. Physics

\textbf{\author} Enter your name, how you want to see it on your dissertation. do not forget your middle names or initials.

\textbf{\advisor} Enter your Advisers name, do not forget the 'Dr. ' prefix if they have a PhD!

\textbf{\coadvisor} Enter you Co-Advisers name, if you do not have a co-advisor, then remove this command from you dissertation.

\textbf{\dpthead} Enter your Department heads name and their title

\section{Starting Your own Chapter}

For now I am going to skip the 'Front Matter' section an move straight to getting you started on your first chapter.

\textbf{Step 1:} Take a Breath. Get settled. Get ready to write!

\textbf{Step 2:} Make a text file, in the chapter folder, for your first chapter, example 'chapter-1.tex'.

- Navigate to the left pannel and click on the director named 'chapter' such that is it highlighted

  

- Click the '>' on the left to make all the files inside the chapter directory show.

- Click the 'New File' button. This is the Left most button just below 'Menu' and above 'chapter', and looks like a page with one of the cornets folded.

- Enter your chapter file name eg. 'my-first-chapter.tex'

\textbf{Step 3:} Click on the text file you just created, start your chapter with \texttt{\chapter{}}, and insert your chapter title in the brackets

\textbf{Step 4:} Start writing your chapter content. After each heading divider (\texttt{\chapter{}}, \texttt{\subsection{}}, or \texttt{\subsubsection{}}) you must have some text before you go to the next sub level.

\textbf{Step 5:} Add your newly created chapter text file into your 'Main Body' of the Thesis template

- Go to 'mines-example-dissertation.tex' (or which ever name you have given it)
Step 6: Build pdf from the \LaTeX file. (In Overleaf it is the 'Recompile' button)

Congratulations, you have made your first steps to a fully well rounded dissertation! Now you can remove any of the example chapters if you no longer want to look at them, or comment them out in case you later want then for reference.

2.5 Starter Tips

Here are some tips which will help you be faster and more organized when writing your dissertation.

1. **Formatting**: you can spend a lot of time one proper figure formatting and making the text and figures fit together nicely. If you are still in the writing or text editing stage, try to keep the figure formatting till the end otherwise you will be doing a lot of reformatting.

2. **Keep Things Separate - FILES**: This counts for a lot of things:

   - Chapters: Place all figures in the 'chapter' folder/directory. Let each chapter be it's own .tex file and add them to the main thesis document using \input{}.
   - Figures: Place all figures in the 'figures' folder/directory. You can add sub-directories/folders to organize your figures even more. There is a graphics path set to look for all figures in the 'figures' directory, you can add more in the \graphicspath{{./figures/}{./my/own/path/to/figures}}
   - Additional: The bibtex document allowing with any other additional files are in the 'supporting-files' folder/directory. This is also where the list of symbols and abbreviations if kept.

3. **Keep Things Separate - LABELS**: be sure to identify each label with 'what it is', for example tab:, fig:, cite:, chap:, eqn:, or apnd: can be added at the beginning of a label for tables, figures, citations, chapters, equations, or appendix's. This will help you when you use \ref{} to reference something. And you will be less likely to double label anything.

4. **Repeating Equations or Groups of Symbols**: if you have a lot of reoccurring equations or symbols (or a bunch of constants that you always group together) then I advise you to make short hand notation with your own new commands. Place these in the my-Equation.sty file. Make sure that the command you choose to make does not already exist. A good way to do this is by placing uppercase letters in your new commands. This will speed up your equation writing.
CHAPTER 3
GENERAL FORMATTING GUIDELINES.

Here are some general formatting guidelines that have been implemented in the template to abide the Colorado School of Mines Office of Graduate Studies (OGS) thesis guidelines.

3.1 Font

The font must be either in Times New Roman or Arial, have a 10-12 point type. The font size and style must be the same throughout the thesis. The text must be black, and you may not have handwritten symbols or equations in the text. The fonts must be embedded in the document.

The thesis text style is Times New Roman, Arial is not a supported font by \LaTeX. The font is automatically black, and the fonts should be properly embedded when you build the pdf. You can set the font size at the top of the main document:
\documentclass{{}} The \[] is filled with [letterpaper,10pt] you can change the 10pt, to 11pt or 12pt to change the text size to one you like best. Also the \} is article. That is what the template was build for. The font size will apply to all text in the thesis (title, captions, regular text...)

The user has to be sure not to add any handwritten notes or equations to their own document.

3.2 General Formatting

There are tree sections to your dissertation, the front, body and back matter:
\frontmatter sets the Front Matter formatting.
\bodymatter sets the Body Matter formatting.
\backmatter sets the Back Matter formatting.

These commands control the font settings, page numbers, margins and all the other things the user does not have to worry about. DO NOT delete these commands from the document please. And be sure to add your abstracts, chapters, references... after the right commands.

3.2.1 Page Numbering

Page numbers are centered, 3/4 inch from the bottom of the page. They are the same font style as the main text. There are No page numbers on the Title page or the Copyright page (if you have one). There are lower case Roman numerals on the (a) Unsigned Submittal Page - Required, always page ii, (b) Abstract - Required, always page iii, (c) Table of Contents - Required, (d) List of Figures - Required if you have Figures, (e) List of Tables - Required if you have Tables, (f) List of Symbols - if applicable, could be place behind the Reference Cited, (g) List of Abbreviations - if applicable, could be place behind the Reference Cited, (h) Acknowledgments - if applicable, and (i) Dedication Page.

There are Arabic numerals on (a) Chapters – Chapter 1 is always page 1, (b) References Cited - Required, (c) Selected Bibliography - if applicable, and (d) Appendices - if applicable.

ALL OF THESE THINGS ARE TAKEN CARE OFF BY THE COMMANDS LISTED JUST ABOVE (\frontmatter, \bodymatter, \backmatter)
3.2.2 Margins

All margins must be 1 inch, with an 8.5x11 page size. Set by the template. No text, figures, equations, etc. may go into the 1 inch margin.

You will get an error message from the Template after you have run the code that will tell you if anything has reached into the 1" margins. You must make these items smaller or break them up across multiple lines to get rid of the error.

Any figures or tables that are too large to fit within the 1 inch margin on all sides must either (1) be shrunk to fit within the margins, (2) uploaded as supplemental files. Tables that cover more than one page need to be labeled correctly (look at the appendix of the example chapter). Figures that can fit on the page without the caption may have the caption on the 1st page, following the figure on the next page.

DO NOT split a single item/image over 2 or more pages. DO NOT split a caption over 2 pages. This is all you! Do not do this!

3.2.3 Line Spacing and Indentation

You can have one and a half or double line spacing in the front matter and text in paragraphs, but be consistent and have the same in both. Exceptions are the Figure and Table captions - these are single spaced. Also Multi-line Titles, subheadings, captions, references in the Table of Contents, Lists and References are single spaced.

There is appropriate spacing between the text and Figures and Tables to differentiate. Each paragraph is indented.

Most of these things are set by the template and you do not have to put any extra through into. The only thing you might want to change is the text spacing. To change the line spacing you need to go to the "csm-thesis.sty" file. Find the words "Line Spacing". The quickest way to find it is by doing 'Ctrl + F' and putting in those words. The default setting is double spaced, you can use either of these:

\onehalfspacing sets the text to 1.5 spacing
\doublespacing sets the text to double spacing

3.3 Titles

Title Page, Table of Contents, List of Figure/Tables, Chapters, References, etc., (1) each of these sections or new chapters begins on a new page. (2) Chapter/Section Titles are 1 keyboard stroke below the 1" margin, centered on the page horizontally, all UPPER CASE letters, same font style/size as main text. DO NOT make them bolt or italic.

These requirements are taken care of by the template. Any title or heading that you add will not like any math in it. To add math or, quickly add short hand atom notation use these commands:

\textorpdfstring{}{} This command takes two inputs, the first is math mode, and the second should be a text replacement. Here you will replace the math with an alternative for the text recognition.

For example, \textorpdfstring{H$_2$O}{Water}, this will show H2O, but read water to any pdf viewer.

\atom{}{}{}{} allows you to add an atom in your titles. You can also use it throughout the text when ever you are adding such notation. The inputs are: (1) Mass number, (2) Atomic Number, (3) Element, (4) Charge, and (5) bottom option. You can leave any of the fields empty if you do not want to include that section.

An example is \atom{12}{6}{Th}{2-}{3}, this example would produce $^{12}_{6}$Th$^{2-}_{3}$, and leaving the last two fields empty $^{12}_{6}$Th.

Make sure to check if atoms are allowed in the title. Note that the usage of atoms/molecules in titles may need to be spelled out on the cover since the binding company cannot typeset them.

3.3.1 Chapters

The word 'CHAPTER' and number are on the top line followed by the chapter title on the line below. The title is in all CAPITAL letters and same size text. Multi-line chapter titles are in an inverted pyramid shape, just like the title page. ALL IS SET BY THE TEMPLATE.
3.4 White Space and Blank Pages

Text must extend to the bottom of the page. No more than 3 inches of white space to the edge of the page (2.25 inches to the page number). Figures/Tables do not need to directly follow the text referring to the figure/table. If a figure/table won’t fit on the page (1) refer the reader to the page where the figure/table can be found, (2) and move the next section of text up to the page with the white space.

No blank pages are allowed. White space is only allowed (1) At the end of a chapter, (2) When a figure/table fills more than 50% of the page and no other text is added to the page (figure or table stands along on the page). (3) If the first 2 lines of a paragraph will not fit at the bottom of the page, (3) if the next subheading + 2 lines of text won’t fit at the bottom of the page.

How to Resolve Excessive White Space: (1) Extend text to the bottom of the page. (2) if text refers to a figure/table and the figure/table will not fit on the page: (a) Make a note in the text referring to the figure/table (i.e. see Figure 3.1 on page 8). (b) Then move the next lines of text up to fill the white space and finally add your figure or table in the next most appropriate spot.

To fill a page, you may increase the size of figures/tables. Just make sure that they do not look out of proportion to the other text, figures or tables. It is acceptable to break equations between pages. It is acceptable to split a table over more than one page. It is acceptable to split a multi image figure over more than one page. It is not acceptable to split a single image figure.

Most of this is properly regulated by \LaTeX. The pdf builder will try to optimize placement of figures/tables, automatically split equations across pages, and also check if the first to lines of a paragraph (+ heading is applicable) fit on the bottom of the page, and move it accordingly if it does not fit.

YOU are responsible for not purposefully adding blank pages. Also if you do use the landscape figures or tables you have to be sure that there is not extra white space on the pages before. Texts does not automatically wrap around these environments.
FRONT MATTER are all the things that are happening behind the scenes and in front of the body. Title page, signature page, tables and list of the content all fall into this category. Almost all of the commands described here are already in the example these, I would advise you to just work from that and make it your own instead of starting from scratch.

4.1 Title Page

The Title page shows the Thesis Title and Authors Name (with 'by' above the name). There are no other words, symbols or images allowed on the title page. There is no page number and the name is 1 inch above bottom margin, centered horizontally in upper and lower case letters.

The thesis title must be (1) in all UPPER CASE letters, (2) same size font and style font as main text (title is not larger), (3) be centered on the page both horizontally and vertically, (4) be in an inverted pyramid shape, (4) not in bold font, (5) Special characters in title are spelled out (section not §)

All of the above criteria are taken care of in the Thesis template, apart from the two user input listed below.

\title{} Add your title. Place line breaks (\\) in the title to create an upside down pyramid. The line above is longer than the line following it.

\author{} Add your name, do not forget your middle name(s).

\maketitle This will make the title page. This needs to be followed by \newpage.

4.2 Copyright Page (optional)

The Copyright page is optional, the text must be centered on the page both horizontally and vertically and there is no page number. Add this page is you are paying ProQuest to file for copyright protection on your behalf. See OGS website for more information.

\makecopyright{} in the brackets it says \the\year. If your copyright spans multiple years or does not match the current year replace \the\year with the appropriate years. This needs to be followed by \newpage.

This must go in front of the Submittal Page and after the Title Page. The command will set the copyright page with all the required guidelines.

4.3 Submittal Page

The submittal page is always page ii. An electronic copy is uploaded as part of thesis in ProQuest with out any signatures. Check if a hard copy of the page, with signatures must be handed to the Grad Office.

You need to have filled out the following fields to make the submittal page

\degreetitle{} Name your degree title, eg. \degreetitle{Master of Science}

\discipline{} Name your degree discipline/field, eg. \discipline{Engineering Physics}

\department{} Name your department. eg. \department{Physics}

\advisor{} Name your advisor, eg. \advisor{Dr. Primary A. Advisor}

\coadvisor{} If applicable, name you co-advisor, eg. \coadvisor{Dr. Secondary A. Advisor}. If you do not have a co-advisor, do not include this command!

\dpthead{} Name of your department head and their Title. eg. \\
\dpthead{Dr. Uwe Greife}{Professor and Department Head}

\makesubmittal This makes the submittal page. This needs to be followed by \newpage.
4.4 Abstract

The abstract title, ABSTRACT, is centered horizontally, 1 keyboard return below 1 inch top margin & in ALL UPPER CASE LETTERS.

Write your abstract between the \begin{abstract} and \end{abstract} \newpage commands. The abstract should be a brief statement of the thesis problem, research method, and report on major findings. The abstract is generally between the 200 and 300 words in length (1 or 2 paragraphs). DO NOT repeat the thesis title. Try not to use any citations. The abstract in the example is written in a file ‘i-abstract.tex’ under the chapter directory.

4.5 Table of Contents and Lists

Lists are double spaced between titles/captions. Single line spacing for multi-line titles and captions. Page numbers are preceded by ellipses (...) and are right justified. The text does not extend beyond the last leader dot (...) for clear line of sight of the page numbers. Each title and caption must appear exactly as it does in the text.

The formatting guidelines should work properly when using the csm-thesis style guides. Use these commands to make the following lists

\tableofcontents makes the Table of Contents.
\listoffigures makes the List of Figures.
\listoftables makes the List of Tables.
\listofsymbols makes the List of Symbols.
\listofabbreviations makes the List of Abbreviations.

All of these need to be preceded with \newpage.

NOTE: The list of abbreviations and list of symbols can either go in the FRONT or BACK MATTER of your thesis. If it is in (1) the Front Matter they are the last lists in the sequence of lists, (2) the Back Matter the lists are placed immediately after the REFERENCE CITED.

Note: the symbols and abbreviations in the example thesis are defined in the file ‘symbols-and-abbreviations.tex’ in the supporting-files directory. To keep organized you are recommended to add your abbreviations and symbols in that file.

4.5.1 List of Symbols

\listofsymbols makes the List of Symbols in the order in which they are defined
\listofsymbols* makes the List of Symbols that is sorted alphabetically on the description. Note that the system sorts capitalized and non-capitalized descriptions separately so be consistent with describing the symbols.
\ShowSymbolFirst Place this above the \listofsymbols command to show the symbols on the left instead of the right.
\addsymbol{}{} This will add a symbol. You can add them anywhere in the text, but for your convenience there is one place, ‘supporting-files/symbols-and-abbreviations.tex’ where you can just keep track of all your symbols and abbreviations. The first input is the description, and the second input is the symbol. Eg. \addsymbol{Vacuum Permeability}{$\mu_o$}.
\addsymbol[]{}{} You can create sub-lists if you have a lot of symbols, \addsymbol[sub-list]{description}{symbol}.
\listofsymbols[] Place the name of the sub-list in the brackets to call the sub-list. An example of this is shown in the example dissertation.
4.6 List of Abbreviations

\listofabbreviations makes List of Abbreviations in the order in which they are defined.  
\listofabbreviations* makes List of Abbreviations sorted alphabetically on the description.

\addabbreviation{description}{abbreviation} You can add abbreviation anywhere in the text, but for easy I would always define them in the same place.

The first input is the description, and the second input is the abbreviation. Eg. \addsymbol{Second-Harmonic Generation}{SHG}.

4.7 Acknowledgments (Optional)

The title, ACKNOWLEDGMENTS is centered horizontally, 1 keyboard return below 1 inch top margin and in all UPPER CASE letters.

An acknowledgments page is optional and is where the author recognizes advisor, committee members, and other persons who provided special help or advice. Included here are also any fellowships or other sponsorship support from outside agencies or from CSM, and any permissions received for extensive use of copyrighted material. The capitalized title is centered on the line consistent with the chapter headings. Page numbering continues in Roman numerals, as in all front matter.

Put the acknowledgment between \begin{acknowledgments} and \end{acknowledgments}\newpage. If you do not wish to have a acknowledgment, you do not have to include these commands, just remove or comment out the lines.

4.8 Dedication (Optional)

A dedication page is optional and not frequently included in a thesis. However, occasionally the thesis writer wants to dedicate the document to a professional colleague, friend, or relative. A dedication typically expresses gratitude for someone’s support. If a dedication page is included, it is placed at the end of the front matter section, following the acknowledgments. Typically, a dedication page has no title, it simply states, e.g., “For my father.” Roman numeral page numbering continues on the dedication page.

Put your dedication between the \begin{dedication} and \end{dedication}\newpage. If you do not wish to have a dedication, you do not have to include these commands.
CHAPTER 5
BODY MATTER

The BODY MATTER is the main body of the dissertation, some follow and Introduction, Background, Theory, Results, Conclusion type of flow. Your body matter goes after the \bodymatter command.

5.1 Section Structure

Here are the different levels of text that you can uses to section off information as you see fit.

\chapter{} This is the chapter title of your chapters. It sets the text to all capital letters, centered on the page. Long chapter titles should automatically follow the inverted pyramid.

\section{} After you have declared your chapter, you can make subsections.

\subsection{} Within your subsection you can have sub-subsection.

\subsubsection{} Within you sub-subsection you can have sub-sub-subsection. You are highly discouraged to using the last paragraph option.

5.1.1 Chapter Titles

Chapter titles need to be (1) Consistently formatted throughout the entire thesis, (2) centered on the page, (3) same size and style font as the main text, (4) not bold font and (5) in all caps. Each new chapter must start on a new page, with CHAPTER + the chapter number + the title. The CHAPTER + chapter number is one keyboard stroke below the 1 inch top margin, followed by the title on the next line. Chapter titles that cover more than one line need to be in an inverted pyramid shape.

You do not have to do anything - all these requirements are set in the template structure.

5.1.2 Headings and Subheadings

Headings and Subheadings must be (1) consistently formatted throughout the entire thesis, (2) same spacing before every heading & same spacing before every subheading, and (3) in bold font with same font style and size as main text.

Do not add extra space before a heading/subheading just to fill a page. If you add space before one heading/subheading, you must add the same amount of space before every heading/subheading throughout the entire thesis. At least two lines of text after a heading or subheading before the end of a page.

You do not have to do anything - all these requirements are set in the template structure. The template should check if two lines and the heading fit on the bottom of the page, if they do not fit, it will pull the heading to the next page.
5.1.3 Math Mode in Sections, Titles and other Bookmarks

Putting math-mode in sections, titles, and other bookmarks will generate warnings with hyperref. The ways you can work around this is (1) Not use the hyperref package, or (2) use our build in pdf replacement function (below).

Look at the commands in Section 3.3 to see how to add math in any of the titles, headings or sub-headings properly.

If you do not use this to put math in these heading then you will get an error "Token not allowed in a PDFDocEncoded string".

5.2 Figures and Tables

There are a lot of criteria, so they are addressed in the list, right after the mentioning of the criteria.

OGS REQUIREMENTS:
1. Must be listed in Front Matter in List of Figures or List of Tables
   → Make sure you have \listoffigures and \listoftables after the table of content
2. Must be numbered, have captions, and be referenced in the text prior to appearing – If the figure or table will not fit on the page immediately following the reference and there is too much white space on the page, you must bring text from the next section up to the page to fill the white space. In your reference to the figure/table, you will tell the reader what page the figure/table can be found.
   → Use \label{} to give the figure/table a number. Use \caption{} to give the figure/table a caption. Place the figure/table after your first reference to make sure the reference comes first.
3. Must fit within 1″ margins
   → To make sure the figure falls within the margins, set the figure width in terms of the text width. For example \includegraphics[width=0.5\textwidth]{path/to/file}, sets the image to 50% of the text width. You may set it in terms of inches, but make sure it is smaller than 6.5 inches in width or 9 inches in height.
4. Do not wrap text around a figure/table
   → Do not use fig-wrap package.
5. Do not place figures/tables side by side - sequential figures/tables need to follow one after the other
   → Make a new figure/table space for each separate figure/table. You may use sub-figures if figures go together (but make sure they do not have a different figure number.
6. Captions are single spaced: Font is black and same style and size as all other font throughout thesis (THE TEMPLATE TAKES CARE OF THIS)
7. Figure number and captions are placed directly below the figures
   → Place \caption{} and \label{} below/after the \includegraphics[]{}
8. Table number and captions are placed directly above the tables
   → Place \caption{} and \label{} above/before the \begin{tabular}
9. 1st number = chapter number and 2nd number = figure/table number within the chapter – Example: Figure 2.4 is the 4th figure in chapter 2 (THE TEMPLATE TAKES CARE OF THIS)
10. Figures and Tables in the appendices will be numbered with the appropriate appendix letter, followed by the figure or table within the appendix (ie. the 2nd figure in appendix A is Figure A.2 -You may use dashes(-) instead of periods (.), but make sure you are consistent throughout the entire document. (THE TEMPLATE TAKES CARE OF THIS)
11. Single figures or tables take up more than 50% of the page, may stand alone on the page, centered on the page both horizontally and vertically. See Chapter 7 or 8 for more information.
12. If caption and table/figure do not fit on same page fill the page with no room for caption: – 1st page: place label + number + caption on the page, centered horizontally and vertically – Followed on the next page by the figure/table

13. Tables split over more than one page need to have: – The 1st page labeled with the Table + number and full caption. Then, all subsequent pages, need to be labeled with Table + number + Continued.

14. Larger than 6.5"X9": – Need to be shrunk to fit within the page with 1" margins or -if not integral to the thesis, uploaded as supplemental files. – Do not add pages larger than 8.5 X 11

There are a lot of criteria here that need to be met. If you are somewhat familiar with LaTeX you should be fine. But lets just point out some things. For proper placement of table/figure let \LaTeX figure it out for you. Place the figure or table after you have first mentioned it with the [ht] as \begin{figure}[ht]. This will automatically find the proper placement of the figure, either right where you placed it or at the top of the next page. Use [ht] for figures you want to mingle with the text. If a figure or table take up more than 50% of the page, leave off the [ht] and the object should be properly placed on it’s own page.

Example Figure text below, but see Chapter 7 for more examples. See Chapter 8 for more information about inserting tables.

\begin{figure}[ht]
\begin{center}
\includegraphics[width = \textwidth]{path/to/figure.pdf}
\caption{\label{fig:fsm}The Flying Spaghetti Monster Knows All}
\label{fig:unique-label}
\end{center}
\end{figure}

5.3 Labeling and Referencing

\ref{} automatically adds "Table" or "Figure" in front off the reference number when you reference figure or tables. If you use \ref{} for equations it just gives you a number (example: 1.1). You can use \eqref{} which will put parenthesis around the reference number of the equation. If you want "Equation 1.1" instead of "(1.1)" you could use \Eqref{}.

For labeling, I suggest you label things with a consistent prefix for what the object is \label{tab:...} for tables, \label{eqn:...} for equations, \label{fig:...} for figures, and \label{apdx:...} for appendix where you fill in the ... for each individual object. This will help you find you stay organized and prevent repetitive labels.
6.1 References

The references must be in a consistent academic style of the discipline. Only references cited in the text are included in REFERENCES CITED. The citations are double space between the different references and single space for individual references. Do NOT type URLs in blue. The title 'REFERENCES' is in all capital letters at the top of the page, centered.

If adding references at the end of a chapter, make that section a heading (i.e. at the end of chapter 1, this could be heading 1.6 References). In this case, References is not a title and therefore it is NOT in all upper case letters.

All of the formatting criteria are met through the template. The 'academic style of the discipline' might vary for users. Currently not sure how to go about changing the style.

6.1.1 BibTeX

The references cited in the mines thesis is based on BibTeX citations. If you are not familiar with this please consult the internet for more information. You should place your citations in the thesis.bib file that is under the supporting-files directory.

If you are not aware, a lot of scholarly sites that provide papers produce BibTeX citations for you. You can just place them in the '.bib' file and not have to worry about formatting your self. Also Mendeley provides BibTeX citations, and is use full for keeping your files organized.

NOT RECOMMENDED: You can add \printbibliography after the \bibliography{thesis} if you are using biblatex instead of natbib or build-in bibliography utility.

6.2 Hyperref and Cite packages

If you did not know hyperref and cite do not work well together. The template is centered around hyperref, but also recommends using natbib. (Some information can be found at https://texfaq.org/FAQ-citesort)

If you choose to add the cite package you can

1. Not use the hyperref package
2. Put cite before hyperref, resulting in no citation hyperlinks
3. Put cite after hyperref, resulting in ugly looking citations

If you wish to remove natbib from the template, set the standard "numeric" style for the bibliography with \bibliographystyle{unsrt}.

6.3 Bibliography

If you want to add a selected bibliography you would add

\cleardoublepage
\begin{selected-bibliography}
<Your selected bibliography would go here, a page break might also be necessary above>
\end{selected-bibliography}

right after the reference section.
6.4 Appendices

All the formatting rules apply to the appendices. Page numbers of appendices continue in same sequence and position as that used in body. Appendices must be listed in the Table of Contents. Figures and Tables in an appendix must be included in the List of Tables and List of Figures. Figures and tables in an appendix must be numbered and have a caption, just like in the main body. Figure, table and equation numbers in appendices are preceded with the appropriate appendix letter – For example, the first figure in Appendix A is labeled Figure A.1, etc.. Supplemental electronic files must have a separate appendix listing and describing the files.

All formatting (but the last) is taken care of thought the Template. 

\appendix{ } Declaring the beginning of an appendix (instead of using \chapter{}).

6.5 Supplemental Files

Supplemental files are optional. If you upload supplemental electronic field, you must include an appendix listing and description of the file. Supplemental files must be uploaded separately from the thesis. There is no file size limitation on supplemental files.
CHAPTER 7
MORE ON FIGURES

There are many ways to insert figures, and also some ways that the OGS thinks are wrong. So here to follow will be code showing different ways of inserting figures as well as the proper ways to show figures.

7.1 Standard way

\begin{figure}
make the figure in the standard way
\end{figure}

Just inserting a figure that is of normal size (take up less than 50% of the page) you can use:

\begin{figure}
\centering
\includegraphics[width = 0.7\textwidth]{path/to/file}
\caption{Caption}
\label{fig:my_label}
\end{figure}

OGS does not want two figures (example Figure 2.4 and Figure 2.5) next to each other. So do not include two \includegraphics\{}\{ in one figure environments. If you want subfigures (example Figure 2.4a and Figure 2.4b) you can use

\begin{figure}
\centering
\subfigure[<subfigure caption (a)>]{
\includegraphics[width=<width>]{path/to/figure/a.png}
\label{fig:sub-figA}}
\subfigure[<subfigure caption (b)>]{
\resizebox{<width>}{!}{\includegraphics{path/to/figure/b.pdf}}
\label{fig:sub-figB}}
\caption{<caption for the full figure (a) and (b)>}
\label{fig:fulFigureAB}
\end{figure}

Figures may only stand alone on a page if they take up more than 50% of the page. Fill up the entire page with text if the figure is not the last part of a chapter. Section

7.2 Build in function

There are some build in functions to maybe make it quicker for you to put in figures. The first is just for regular figures, where you provide the label, file, width and caption of the figure as inputs to one command. \csmfigure{}{}{}{} This function has four inputs: (1) the label, (2) path to file, (3) width of the image, and (4) the caption of the image. This is quicker than the general figure input, but not much different.

For example you can have

\csmfigure{coolFoto}{figures/iamge.png}{4in}{What a nice caption}

Here the figure would be reference with \ref{fig:coolFoto} and be 4in in width.
7.2.1 Long Caption

Another build in function allows you to show a shorter caption in the "LIST OF FIGURES" than you have below the figure itself (only use if your caption is long, more than 2 lines).

\csmlongfigure {}{}{}{}{} This function has five inputs: (1) the label, (2) path to file, (3) width of the image, (4) the caption that will show in the table of content, and (5) the caption that will tag onto caption in (4) underneath the figure.

You provide the label, image, width, sort caption and long caption. Note that the two captions are combined in the text under the figure. You will be able to reference it with \ref{fig:label} with "label" being the label you gave the figure.

7.3 Large Figures

Sometimes you have a figure that takes up more than 50% of the page to show all the details. In regular (portrait mode) you can leave off the 'placement markers' when starting your figure, and L\LaTeX should properly place the figure on its own page without much work from the end user. You can also set the placement marker to p, setting it to its own page. (example: \begin{figure}[p], here [p] is the placement marker, usually [ht] for smaller figures) This is for figures that are taller than they are wide (Portrait).

For figures that are wider than they are tall (Landscape) you need to flip the orientation of the page. Notice that the text does not automatically wrap around the landscape page, so you will have to put extra attention on the 'white' space on the surrounding pages.

\begin{landscape} make the next page landscape with the page number centered along the long edge of the page.

\end{landscape}

Here is an example of how I would place a big figure on the landscape page. An actual example with output is shown in the example template, under the hidden Figure Chapter, just uncomment the \input{chapter/05-Figure-Examples} to see the example.

\begin{landscape}
\centering
\begin{figure}
\centering
\includegraphics[width=.9\linewidth]{path/to/file.pdf}
\caption{Caption}
\label{fig:label}
\end{figure}
\end{landscape}
The ways you can insert tables are pretty straightforward. You can look up LaTeX table generators that can help generate code for you. Here are some of the basics and some information on multi-page tables.

8.1 Standard way

Just inserting a figure that is of normal size (take up less than 50% of the page) you can use:

\begin{table}[ht]
\caption{\label{tab:magic} caption}
\begin{center}
\begin{tabular}{|c|c|c|}
\hline
& B & b \\
\hline
B & BB & Bb \\
\hline
b & Bb & bb \\
\hline
\end{tabular}
\end{center}
\end{table}

8.2 Large Tables

Sometimes you want to show a lot of information in a table (table takes up more than 50% of the page) you may place it on its own page. If you have a table that is taller than it is wide (portrait ratios) and you want it to take up its own page, you can leave off the 'placement markers' (e.g. [ht]) and it should be placed on its own page by LaTeX. Also, just as for the figures you can ensure it is on its own page with \texttt{newpage}, but then you have to check the white space yourself.

For those tables that are wider than tall (landscape) and take up more than 50% of the page you have to flip the page. You do a similar thing as you do for the figure.

\begin{landscape}
make the next page landscape with the page number centered along the long edge of the page.
\end{landscape}

An example of the code is here, and example with output can be see in the example thesis template in the chapter of tables and in the appendix.

\begin{landscape}
\begin{table}[ht]
\caption{\label{tab:magic} caption}
\begin{center}
\begin{tabular}{|c|c|c|}
\hline
b & B & b \\
\hline
B & BB & Bb \\
\hline
b & Bb & bb \\
\hline
\end{tabular}
\end{center}
\end{table}
\end{landscape}
8.3 Multi-page Tables

If you have a lot of information you can have multi-page tables. In the example thesis appendix there is an example of how to make such a multi-page table. Please check that code to help you make your own multi-page table. I will add some of the more important commands here.

\begin{longtable} The long table environment allows a table to be split over multiple pages
\end{longtable} You can add this environment in regular 'mode' or landscape mode

\endfirsthead This command lets you have a different header for the fist page of the table and the following paged of the table.

\begin{longtable}{|c|c|c|c|c.....} \endfirsthead
\hline Header 1 & Header 2 & Header 3 & .... % <-- DON'T add any 'end line' commands 
\endhead
\hline After you have declared that you want different headers, then you need to declare the header that follows on the next page. You write out the header, and when you are done you declare that with this command.

\begin{longtable}{|c|c|c|c|....} \endfirsthead
\hline \endhead
\tabularnewline To end a line you use this command, if you want a horizontal line between the two lines you add \hline after it.

Here is a short example of what it might look like

\begin{longtable}{|c|c|c|c|....} \endfirsthead
\hline Header 1 & Header 2 & Header 3 & .... % <-- DON'T add any 'end line' commands 
\endhead
\caption{The Table Caption on First Page \label{tab:longtable}}\%
\hline My Header 1 & My Header 2 & My Header 3 & ... \tabularnewline 
\caption{The Table Caption on First Page \label{tab:longtable}}\%
\hline Content 1 & Content 2 & Content 3 & ... \tabularnewline .
.
.
\hline Last Line 1 & Last Line 2 & Last Line 3 & ... \tabularnewline \end{longtable}

There are several examples of this in the example thesis. For this quick outline the 'Header #' are the table headers that will show at the top of the table for page 2 and on of the table. 'My Header #' are the headers of the columns on the first page of the table. The caption is only shown of the first page and all subsequent pages show 'Table #.## Continued' where the # are filled in the the table label.
CHAPTER 9
OTHER USEFUL INFORMATION

Here are some other things you will find useful to know and maybe some tips to help you stay organized.

9.1 Running the Template

There are two package option that you may choose to use: "insane" and "nolabel".

\usepackage*[insane]{csm-thesis} insane: Turns off all document sanity checks. This option can be used to render a "sub-document" that is part of the root thesis document. It is important to note that you should NEVER disable this check on your root thesis document, as important formatting errors and warnings will be disabled.

\usepackage*[nolabel]{csm-thesis} nolabel: Disables automatic reference “labeling” of figures and tables. By default the thesis template prepends any reference to a figure or table with “Figure ” or “Table “. This option is meant for disabling the labeling behavior when a document already has the appropriate labeling. It is important to note that if your document DOES NOT have the appropriate labeling (the reference label must EXACTLY MATCH the caption label) then it will not pass the format review.

\usepackage*[chapterbold]{csm-thesis} chapterbold: Makes all the chapter and list titles bold.

\usepackage*[insane, nolabel]{csm-thesis} Use both of the options at the same time.

9.2 Hyperref

The thesis template will automatically import your document information into hyperref, so if you go to “File | Properties” in Adobe Acrobat it will display the title and author. If you would like to over-ride this option then just change the line \usepackage{hyperref} to \usepackage{}{hyperref}.

9.3 Included Packages

Here is just a list of the packages that are included in the csm-thesis style files.

sethspace used to set the line spacing
geometry sets the 1 inch margins all around the pages.
sfmath math symbols and font style
texthead Used to capitalize the title but allow non-capitalized atoms/molecules
subfig allow for sub-figures
float for proper placement of some figures
graphics for figure inclusion
footmisc Force footnotes to always appear at the very bottom of the page
citation for formatting the captions (remove the ’:’ between the figure or table number and caption.
url fix bibliographical references that use special characters (necessary if you do not use hyper ref)

List of packages at the beginning of the main text document document
array for inserting large multi-page tables
longtable for inserting large multi-page tables

natbib for proper citations

hyperref For referencing throughout the document. Can change, look at user manual how to change

pdflscape For inserting landscape-mode objects

amsmath For matrices

listings For inserting programming code

rotating For inserting sideways tables and figures

lipsum For dummy text. You can remove this once you have remove all of the example text.

my-Equations Where I define frequently used equations or symbols for easy use

The packages for the csm-thesis.sty files

csm-thesis-sanity allows for fancy sanity checking

csm-thesis-environments use custom environments for additional error checking

  csm-thesis-title title handling

  csm-thesis-lists list of tables figures, symbols,... Setting the proper formatting and line spacing

  csm-thesis-sections The CSM Thesis uses special section types.

  csm-thesis-compat handle compatibility with a variety of packages

  csm-thesis-encoding fix some character encoding to produce sane results