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Collected Guidelines for Master's Theses

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Collected Guidelines for Master's Theses

This page attempts to explain how to write a Master's Thesis at NPS: the process, timelines, content, style, and format. I compiled it with the help from Susan Sanchez, Mike McCauley, Cynthia Irvine, John Powers, Amela Sadagic, Neil Rowe, Kevin Squire, Daphne Kapolka, and Sam Buttrey. Thank you! Mathias.

First and foremost, check the official NPS thesis requirements, currently at http://www.nps.edu/research/research1.html. That web page also lists many useful resources, including workshops, document templates, and guidelines. The following links and tips are grouped by their main content, but most documents cover more than one topic.

Process and timeline

The CISR has some excellent advice for good practices throughout your degree, from proposal to thesis and from advisor interaction to writing: http://cisr.nps.edu/downloads/thesis_guidelines.pdf
An OR memo, but it is quite specific to OR.

Content

I highly recommend reading and following Prof. Gerald G. Brown's advice in How to Write About Operations Research (local copy, possibly outdated), even if your thesis is not in OR. Do it.
Prof. Neil Rowe makes suggestions for topics by thesis chapter:
http://faculty.nps.edu/ncrowe/thesisoutline.htm (In my experience, the typical page counts are generally not sufficient for a Master's Thesis. Ingenious theoretical results might be described in such brevity, but not experimental and systems work.)

Style

John Power's guidelines for ECE theses are excellent, please follow them!
Some individual style issues:

- Avoid writing in the 1st person! "We" is fine and often preferable over too much passive voice.
- Use active voice. Passive verb constructions can be ambiguous.
- Stay in present tense throughout. Don't write "Chapter 9 will cover" but "Chapter 9 covers."
- Punctuation (periods and commas) go inside quotation marks.
- Put a hard return between figure or table caption and text.
- Do not split text around a figure or table.
- Figure captions need to be complete sentences and explain the main point of the figure. Many readers first flip through a thesis looking at the figures. Cryptic 3-word captions don't capture and describe the essential meaning of an image. Since captions are usually included in the List of Figures, it is best to write a one-line caption "headline" (which will go in the List of Figures) and a more wordy explanation that will only show up in the caption under the figure.
- Capitalize C in Chapter, F in Figure and T in Table when referring to chapters, figures or tables in the text and use roman numerals vs numbers or spelling out, etc. for chapters.

- When using i.e., e.g. etc. always put a comma before and after.
- Master's degree has an apostrophe and Postgraduate is one word.
- If you use "however," make sure there's a comma before and after, unless you start a sentence with it and frankly that's not very good grammar. While on the subject, avoid starting a sentence with "And" or "Because."
- When typing a date, do not use "st" or "th" as in December 1st or 4th. Commas go after Month/date, year. No comma between month/yr.
- Spell out numbers 1 through 9.
- Footnote numbers go outside the punctuation.
- When typing equations in text and use "where" or "if," etc. and it's not a new paragraph then the word starts at the margin.
- Avoid "would," "could" and "should" since they often lead to ambiguous expressions. "Might," "can," "need to" and other constructs are more direct.
- Only short (one page max) figures of pseudo code, sample code, and algorithms go right into the thesis. Everything else has to be in the Appendix, if it is worth including at all. All appendices together should not exceed 50 pages.

Format

See the guidelines at the official NPS thesis page, currently at http://www.nps.edu/research/research1.html.

The choice between LaTeX and Word/OpenOffice is yours. I write most of my technical papers in LaTeX and prefer it generally, but I've also had some 10 years of getting used to it. If you decide to use LaTeX, use the following style and templates: npsthesis.sty, sf298.tex, mycover.tex, myrepdoc.tex.

Miscellaneous

Our very own Rudy Darken has compiled a long list of helpful resources for grad students **<broken link>** in general, including tips for doing research and help for technical writing.

A great set of tips, particularly for international students, was created by NPS Instructors Ron Russell and Beth Summe.

The Dudley Knox Library has a web page with NPS thesis resources, including books and RefWorks.

For citations, you can use RefWorks for which NPS has a license, then there's EndNote (commercial) and Zotero (free).

book: Introduction to Academic Writing (Second Edition) by Alice Oshima, Ann Hogue, ISBN-10: 020169509X

book: Writing Academic English (Fourth Edition) by Alice Oshima, Ann Hogue, ISBN-10: 0131523597

Ron Azuma's famous computer science graduate school survival guide.

David Patterson's talk on How to Have a Bad Career In Research/Academia is amusing and instructive. He has other useful information on that webpage.

William D. Shoaff's guide on How to Write a Master's Thesis in Computer Science.

Prof. John W. Chinneck's guide on How to Organize your Thesis

Iowa State University has a hugely extensive meta-list of advice on Graduate Research, Writing, and Careers in Computer Science

Another meta list: http://www.cs.cmu.edu/~mleone/how-to.html