AN EXAMPLE THESIS DOCUMENT

By

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AN EXAMPLE THESIS DOCUMENT

A

THESIS

Presented to the Faculty

of the University of Alaska Fairbanks

in Partial Fulfillment of the Requirements

for the Degree of

MASTER OF ARTS

By

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Fairbanks, Alaska

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Abstract

This document gives a quick, relatively minimal example of the use of `uafthesis.cls`, while trying to show its features.

This section is contained in `abstract.tex`.

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Acknowledgements

`uafthesis.cls` was originally written by Curt A. L. Szuberla, "kludged from the [standard] latex2e `report.cls` and from `ucthesis.cls`" in Fall 1996. It has since been updated by Matt Heavner in 1999, Dana Moudry in 2002, and Ryan Woodard in 2004. As the author of the more recent updates (2011), I would just like to point out that 99% of the work was done by, well, a *lot* of other people.

Thanks, guys.

"It looks...perfect. Wow."

> —Faith Rayfield, Past Thesis Checker

"The title on the Title Page needs to be the same font size as the rest of the page."

> —Laura Bender, Graduate School Director (2011)

Chapter 1
What's All This, Then?

1.1 Introduction

This is the project for the `uafthesis` LaTeXdocument class, the official unofficial volunteer-driven document class for theses written for the University of Alaska Fairbanks, in LaTeX.

1.2 Prerequisites

Before you decide to write your thesis in LaTeX, you should already know a little LaTeXand feel comfortable writing and compiling a simple document, especially one with figures and tables.

Additionally, you will have to use `bibtex` (or some alternative) to keep track of references. It's not particularly difficult, but chances are you will have to either learn it or give yourself a refresher.

One thing you will see in this example that you may not have encountered before is the use of \input and \include to split the project into multiple, smaller files. The most important difference is that \include will wrap the included file in page-breaks, while \input may as well be a copy-paste job.

Another issue that may come up is having to run `pdflatex` and `bibtex` multiple times. In order to do a full compile without anything wrong, you will have to run something like the following commands:

```
pdflatex example
pdflatex example
pdflatex example
bibtex example
pdflatex example
pdflatex example
```

That's right, `pdflatex` gets ran five times. A similar situation arises from the use of vanilla `latex`. This is because of how LaTeXgenerates files while compiling that it uses to fill in data during subsequent run-throughs.

This can be mitigated somewhat by using some sort of build system. For example, Ryan Woodard advocated using a makefile to ease the pain. Another option may be Rubber, or even the full set of commands in a shell script. There are many techniques, some more appropriate than others. [*Holbrook et al.*, 2010]

It is also worth your time to read other theses, to get an idea of how they should be written. This may seem obvious, but I will admit that I did not, and I ended up going through many a rewrite. Also obvious: This document is *not* written like a thesis. Duh.

Finally, **at least skim the UAF Thesis Handbook**. [*School*, 2011] It's not hard, and it will give you an idea of what to expect in terms of formatting. In particular, as `uafthesis` is a volunteer effort, *there is no guarantee that the graduate school's formatting guidelines are met by this document class.* Moreover, some things (such as proper initial capitals in title headings) are on you, and not something `uafthesis` does for you.

1.3 Installation

Like any LaTeXfiles, there are basically two ways:

- Copy `uafthesis.cls` into the same folder as your project. This is probably the easiest way.

- Set yourself up with a properly indexed `/texmf/latex` folder, create a new folder called "uafthesis," and put `uafthesis.cls` into that folder. This involves some initial effort, but if you use LaTeXregularly it's worthwhile for holding all sorts of packages. In fact, if you are a regular LaTeXuser, you may have already done this.

Which method you choose is up to you.

Chapter 2
Basic Use

2.1   Introduction

In this section, I take the main file, show some snippets, and explain what they all mean, or why you would want to use these things.

2.2   example.tex

```
\documentclass{uafthesis}
```

This is where the secret sauce is.

```
\usepackage{fixltx2e} % Allows \(\) in captions, amongst other things.
\usepackage{ppl} % The Paladino font
\usepackage{amsmath, amssymb, amsfonts} % Thanks, AMS!
\usepackage{graphicx, float} % Graphics stuff
\usepackage{verbatim} % For very basic listings and multi-line comments.
%\usepackage{chapterbib} % This is an option for those bundling papers.
\usepackage[square]{natbib}
%\usepackage{tocbibind} % This fixes the "bibliography in ToC" problem.
                        % Use with chapterbib.
\usepackage{url} % I quote some URLs in the bibliography"
```

`fixltx2e` fixes an annoying bug where using inline mathematics delimiters in captions for graphics and tables would cause errors in the compiler. Alternately, one may simply use the dollar signs instead.

`ppl` is the "Paladino" font, which has been extremely popular for UAF theses in the past. There is, however, no rule against using "Computer Modern" or some other font, and in fact "Paladino" was originally intended for headings only when it was designed (fun fact).

Some writers of theses end up bundling multiple published papers into a thesis, especially in the case of PhD candidates. `chapterbib` allows for separate bibliographies for each chapter, which is the most appropriate format given this bundled-paper style of thesis. Many theses—mine included—only have a single bibliography.

Finally, `natbib` allows one to change how citations appear.

```
\input{custom-macros.tex}
```

Many authors write their own LaTeXmacros in order to make writing their thesis easier. This document does not have any custom macros.

```
\begin{document}

\title{An Example Thesis Document}
\author{Joshua Holbrook}

\degreeyear{2011}
\degreemonth{May}
\degree{Master of Arts}
\department{Dept. of Fresh Beats}
\numberofmembers{3} % Make sure this is right! The grad school hates empty
                    % signature lines.
\prevdegrees{B.A.M.F.}
\college{College of Pwning Noobs}

\makesig
\maketitle
```

In this section, the important information about the thesis is filled in, and then the signature page and title page are generated.

```
% Wondering when to use 'input' and when to use 'include?'
% read http://en.wikibooks.org/wiki/LaTeX/Basics#Big_Projects .
\begin{abstract}
  \input abstract.tex
\end{abstract}

%Table of Contents and such
\tableofcontents
\listoffigures
```

```
\listoftables
%\listofothermaterials
\listofappendices
```

Here, the abstract is inserted, then the table of contents and other tables. Note that the appendices are in a separate table. **This is not typical** in LaTeXand requires special handling, as detailed in the next chapter. Similarly with the List of Other Materials, if your thesis has one (think CDs and such).

```
\begin{acknowledgements}
  \input acknowledgements.tex
\end{acknowledgements}

\begin{quotepage}
  \input quotepage.tex
\end{quotepage}

\include{ch1}
\include{ch2}
\include{ch3}
```

After inputting a few more pages, the chapters (separate documents) are all included.

```
\nocite{wikibook}
\bibliographystyle{agufull08}
\bibliography{thesis}
```

This generates the bibliography. Note that the bibliography style is set to `agufull08`. Generally, the graduate school isn't picky about bibliography style, as long as it's consistent. For geophysics papers (very common at UAF), the AGU style is a great choice. It is included here, but may also be found at AGU's web site.

```
\appendix
\include{apx1}

\end{document}
```

This is how appendices are included. In fact, they are written just like regular chapters, and the \appendix flag signals that following chapters should be given letters (A, B, C...) instead of numbers (1, 2, 3...).

Bibliography

Foundation, T. W. (2011), Latex wikibook, web, `http://en.wikibooks.org/wiki/LaTeX`.

Holbrook, J., et al. (2010), Let's talk latex build systems: Or, avoiding the whole "pdflatex, bibtex, pdflatex, pdflatex, pdflatex" thing, web, `http://www.reddit.com/r/LaTeX/comments/b9wvi/lets_talk_latex_build_systems_or_avoiding_the/`.

School, U. G. (2011), Thesis format handbook, web, `http://www.uaf.edu/gradsch/forms/Handbook_Thesis_10-11.pdf`.

Appendix A

Extraneous Images and Tables

Figure A.1. Eating 1 battery

Table A.1. Captain Falcon

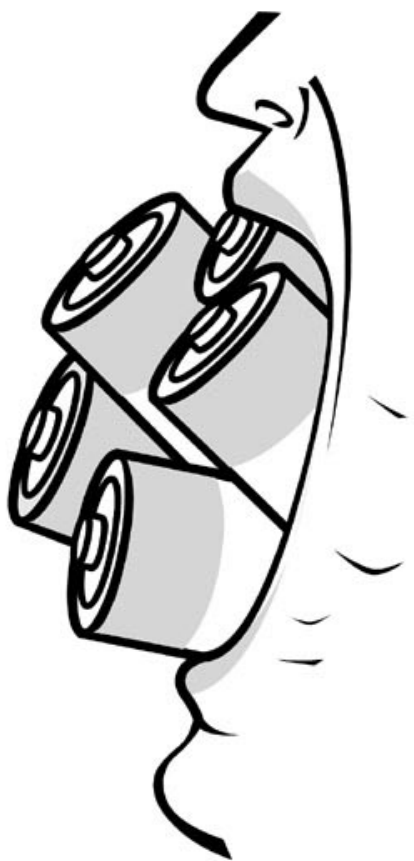| Falcons	Not Falcons
FALCON	KICK
FALCON	KICK
FALCON	PUNCH!!

Figure A.2. Eating 5 batteries