

# ncsuthesis — NC State Thesis

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## Abstract

The ncsuthesis class provides formatting, macros, and content to meet the thesis requirements of North Carolina State University, specifically the ETD guidelines.

## Introduction

Composing the content for a dissertation or thesis is a daunting task. The goal of the ncsuthesis class is to let the author focus on the content while the formatting is handled transparently, in the tradition of  $\text{\LaTeX}$ .

## Design Choices

The NC State guidelines are given in a [PDF document](#) at the [ETD website](#). Although parts of the formatting rules are strict, there is still considerable flexibility in formatting the thesis document. A few examples where choices exist follow.

**Font size** Sizes 10 to 12 point is acceptable, although 10 point is probably too small. Consider using 11 or 12 point.

**Type face** Most  $\text{\TeX}$  and  $\text{\LaTeX}$  users use the default Computer Modern fonts. While this type is perfectly acceptable, [other options](#) are available that might better suit your taste.

**Heading style** There are lots of headings and section titles in the document, at the top of the *Abstract*, *Dedication*, and *References* pages, for instance. There are no requirements for these headings, except that that the style be uniform. The ncsuthesis class provides commands that control the styles so that making changes is simple. One common typographical style is to set headings in a sans serif font.

**Margin** The margin has been set to the minimum required. Feel free to increase the margins in the class file, as the default line lengths are a bit long. For example, using Computer Modern at 11 point, the default margins give line lengths of about 90 characters, while experts typically recommend 60 to 70 characters.

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**Line spacing** ETD rules permit either 1.5 or double spacing. One and a half spacing will give a look closer to a normal book, but other considerations may tip the scales for double spacing. It is easy to change between the two using `ncsuthesis`, passing either the `onehalfspacing` or `doublespacing` options in the `\documentclass` declaration.

**Page number location** ETD requirements offer four options: upper right, upper center, lower right, and lower center. The `ncsuthesis` class places the page number at the bottom center of the page, and does not offer options to easily switch. (It is possible to place it at one of the other locations, but one would need to modify the `ncsuthesis.cls` source.)

The bottom center was selected for the following reasons. First, the center seems more natural since this is a one-sided document. Second, the bottom was chosen so that the bottom margin would be larger than the top margin. The guidelines require that the page number be one inch from the edge of the paper, and that the rest of the text be two double-spaced lines from the page number. Normally, the page number is set in the margins, but in this case, the rules effectively increase the top (for numbering at the top) or bottom (for numbering at the bottom) margin. Given that either the top or the bottom margin would be larger, the bottom seemed a better choice since *page layouts commonly* use a larger bottom margin (also see *The Elements of Typographic Style* by Robert Bringhurst or *Getting it Right with Type* by Victoria Squire), whereas a larger top margin is uncommon.

## Acknowledgements

The `ncsuthesis` class was written from scratch, as much as is possible in our internet age. Peter Bloomfield made a number of helpful suggestions and improvements, especially regarding the page headings. *His L<sup>A</sup>T<sub>E</sub>X website* has a number of helpful resources. The *Penn State L<sup>A</sup>T<sub>E</sub>X thesis class* written by Professors Gary Gray and Francesco Costanzo was used as a reference for many of the L<sup>A</sup>T<sub>E</sub>X programming constructs. The previous NCSU thesis class, from which some of the formatting rules were extracted, had additions made by Eric Adles in March 2007, Jason Brinkley in August 2008, Arnav Jhala in December 2008, Manish Sachdev in January 2008, and Terry Byron.

# 1 Change History

v0.2	General: A number of changes suggested by Dr. Bloomfield, including improved chapter headings, checking for a period after a middle initial, and natbib compatibility. . . . .	2	adding space between colon and caption text in figures and tables. The previous method caused the space to appear in List of Figures and Tables. Increased slightly the spacing between bottom of text and page number since the thesis editor complained about this to one student. Added the textcomp package to get a better copyright sign. . . . .	2	
v0.2.1	General: Appendix spacing improvements and a few other patches from Dr. Bloomfield. . . . .	2			
v0.2.2	General: Support for up to six committee members, and the ability to change the titles listed under each member. A patch from Dr. Bloomfield to set URL hyperlinks in black, as well as a related suggestion from Qiang Wang about another hyperlink color issue. . . . .	2	v0.2.4	General: Added the letterpaper option in case someone's T <sub>E</sub> X installation default isn't letterpaper. . . . .	2
v0.2.3	General: Changed the method of		v0.3	General: Handling co-chairs correctly by Dr. Bloomfield. Also uploaded to Github. . . . .	2