Formatting UCLA Theses and Dissertations Using LaTeX and the `uclathes` Document Style

Rich Wales

Maintainer's note: This document was written by Rich Wales for his `thesis` *style. I've updated it for the* `uclathes` *style for LaTeX2e. Typos are probably mine. —John Heidemann.*

This document explains how to format your thesis[1] manuscript using LaTeX. It describes a special "document style" macro package which, it is believed, will meet UCLA's requirements regarding type size, layout, spacing, and margins.

These instructions are not intended to replace the UCLA Graduate Division's publication, *Regulations for Thesis and Dissertation Preparation*. All graduate students should obtain a copy of this publication, read it carefully, and check again in advance of the filing deadline to see if any changes have been made to the requirements.

1 Thesis and Dissertation Format Requirements

Theses filed at UCLA are required to conform to certain physical format specifications. Among the reasons why such formatting issues are important are the following:

- Theses are public, published documents. A copy of every thesis produced at UCLA is filed in one or more University libraries, and are also available on microfilm to researchers elsewhere.

  Each thesis manuscript is a reflection of the high standards of the University. A sloppy manuscript makes the University itself look sloppy, and so such manuscripts cannot be accepted for filing.

- Theses are microfilmed for archival purposes. Additionally, doctoral dissertations are generally microfilmed as well by University Microfilms International (UMI). In order to ensure that the manuscript will reproduce properly on microfilm, it is important that the type face is sufficiently large and that the strokes of the letters are not excessively thin.

- In order to guarantee successful binding of a thesis manuscript in book form—as well as to ensure problem-free microfilming—the text margins and page number placement must conform to known standards.

[1] In order not to make this document overly verbose, the term *thesis* will be used throughout to indicate either a "thesis" (master's degree document) or a "dissertation" (doctor's degree document). The formatting requirements, in any case, are virtually identical for both theses and dissertations. Ph.D. students should understand that—unless indicated otherwise—anything said here about a *thesis* applies with equal force to a *dissertation* as well.

- Page numbering must be done in a standardized, consistent fashion, so as to ensure that errors (such as missed pages) will not occur in either the binding or the microfilming process.

It is crucial that a thesis manuscript should conform to the University's formatting requirements. A non-conforming manuscript will *not* be accepted for filing—even if the content has been approved by the student's committee; even if (in the case of a problem with the signature page) one or more committee members are not available to sign again; and even if not enough time remains for the student to redo the manuscript and file a satisfactory copy by the deadline. You snooze, you loose.

In order to avoid last-minute disasters, the UCLA Theses and Dissertations Advisor strongly urges *all* graduate students to submit a sample of their thesis manuscript (including all the preliminary pages) for review and approval well in advance of the filing deadline. Think about how long you've been here—can't you really manage to get that dissertation to Powell slightly before the last day to file?

2 Using the LaTeX `uclathes` Style

This section describes how to set up the LaTeX input for your thesis to use the `uclathes` document style macros.

2.1 Overall LaTeX Source File Format

Following are two sample LaTeX input files which illustrate the proper use of the `uclathes` document style.

Figure 1 shows a "top-level" input file, which itself contains only a minimal skeleton and includes text from other files via `\input` commands. Figures 2 and 3 show the commands for setting up the preliminary pages.

2.2 The `\documentclass` Command

The `\documentclass` command at the start of the LaTeX input text should have the following form:

`\documentclass [`*options*`] {uclathes}`

where *options* is one of the following:

`MS` — M.S. thesis.

`PhD` — Ph.D. dissertation.

Note that capitalization is important: `ms`, `PHD`, or `phd` will *not* work.

The `uclathes` document style is basically the same as the standard LaTeX `report` style, as far as the body of the text is concerned.

```
\documentclass [PhD] {uclathes}
\input {mymacros}                          % personal LaTeX macros
\input {prelim}                            % preliminary page info
\begin {document}
\makeintropages
\input {chapter1}                          % Chapter 1 of dissertation
\input {chapter2}                          % Chapter 2
\input {chapter3}                          % etc.
\input {chapter4}
\input {chapter5}
\input {chapter6}
\input {chapter7}
\input {chapter8}
\bibliography {bib/network,bib/naming}    % bibliography references
\bibliographystyle {uclathes}
\end {document}
```

Figure 1: Top-Level LaTeX Input File (`diss.tex`)

2.3 The `\bibliographystyle` Command

There is a matching `uclathes` bibliography style which should be used in conjunction with the `uclathes` document style. To use the `uclathes` bibliography style, use the following `\bibliographystyle` command near the end of your LaTeX input (just before the `\end {document}` command):

```
\bibliographystyle {uclathes}
```

The `uclathes` bibliography style is similar to the standard BibTeX `alpha` style. One important new feature in the `uclathes` style is the addition of a new `annote` field in a reference, which can be used to produce an annotated bibliography.

3 Commands for Preliminary Pages

In order to ensure that the preliminary pages of the thesis are in the proper format, the `uclathes` document style macros include all the instructions necessary to produce these pages. All you, the student, need to do is to specify the various pieces of information (names, titles, etc.) in a series of special commands as described below. These commands should be placed at the very beginning of the LaTeX input—*before* the `\begin {document}` command. The very first command after the `\begin {document}` command should be the `\makeintropages` command already described.

Although it is by no means mandatory, it is strongly recommended that you put all of the following "declaration" commands pertaining to the preliminary pages into a separate source file (possibly with a file name like `prelim.tex` or `chapter0.tex`), and then refer to this file via an `\input` command in your main source file.

Note that those headings on preliminary pages which are shown in FULL CAPITALS in *Regulations for Thesis and Dissertation Preparation* are produced in UPPER/LOWER SMALL CAPITALS

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%                                                                      %
%                          PRELIMINARY PAGES                           %
%                                                                      %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\title          {Improving the Throughput \\
                of Connectionless Datagram Protocols \\
                over Networks with Limited Bandwidth}
\author         {Richard Bert Wales}
\department     {Computer Science}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\chair          {Jack W.\ Carlyle}
\member         {Mario Gerla}
\member         {David G.\ Cantor}
\member         {Richard L.\ Baker}
\member         {Robert M.\ Stevenson}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\dedication     {\sl To my mother \ldots \\
                who---among so many other things--- \\
                saw to it that I learned to touch-type \\
                while I was still in elementary school}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\acknowledgments {(Acknowledgments omitted for brevity)}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\vitaitem   {1952}
                {Born, San Francisco, California, USA.}
\vitaitem   {1974--1975}
                {Campus computer center ``User Services'' programmer and
                consultant, Stanford Center for Information Processing,
                Stanford University, Stanford, California.}
```

Figure 2: Preliminary Page Info (`prelim.tex`)—Part 1 of 2

```
\vitaitem   {1974--1975}
                {Programmer, Housing Office, Stanford University.
                Designed a major software system for assigning
                students to on-campus housing.
                With some later improvements, it is still in use.}
\vitaitem   {1975}
                {B.S.~(Mathematics) and A.B.~(Music),
                Stanford University.}
\vitaitem   {1977}
                {M.A.~(Music), UCLA, Los Angeles, California.}
\vitaitem   {1977--1979}
                {Teaching Assistant, Computer Science Department, UCLA.
                Taught sections of Engineering 10 (beginning computer
                programming course) under direction of Professor Leon
                Levine.
                During summer 1979, taught a beginning programming
                course as part of the Freshman Summer Program.}
\vitaitem   {1979}
                {M.S.~(Computer Science), UCLA.}
\vitaitem   {1979--1980}
                {Teaching Assistant, Computer Science Department, UCLA.}
\vitaitem   {1980--1981}
                {Research Assistant, Computer Science Department, UCLA.}
\vitaitem   {1981--present}
                {Programmer/Analyst, Computer Science Department, UCLA.}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\publication    {{\sl MADHOUS Reference Manual.}
                Stanford University, Dean of Student Affairs
                (Residential Education Division), 1978.
                Technical documentation for the MADHOUS
                software system used to assign students to
                on-campus housing.}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\abstract       {(Abstract omitted for brevity)}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

Figure 3: Preliminary Page Info (`prelim.tex`)—Part 2 of 2

by the `uclathes` document style. Also, the thesis title—as well as the student's name on the title page—will appear in large, bold type. The last time I checked, the Theses and Dissertations Advisor had approved these variations.[2]

3.1 Title Page Information

The title of your thesis should be specified via a `\title` command, as follows:

`\title {`*text*`}`

The title will be printed in large (17-point) boldface type, in a LaTeX `center` environment. It is recommended that you specify explicit line breaks via LaTeX `\\` commands.

Your own name should be specified via an `\author` command, as follows:

`\author {`*name*`}`

Be sure that your name is specified *exactly* as it appears on official University records; otherwise, you will run into major trouble when you attempt to file[3].

The department name should be specified as follows:

`\department {Computer Science}`

Normally, the year in which your degree will be granted will be the same as the current year (that is, the year in which you are printing your manuscript). However, if you do your printing in December after the filing deadline for Fall Quarter, your degree will not actually be granted until Winter Quarter, and so you will need to specify the upcoming year via a `\degreeyear` command, as follows:

`\degreeyear {`*year*`}`

Note that the text below the thesis title will be split across lines in a manner slightly different from that shown in the sample title pages in the *Regulations for Thesis and Dissertation Preparation*. The text produced by the `uclathes` style will read as follows (for a Ph.D. dissertation; similarly for a master's thesis):

A dissertation submitted in partial satisfaction
of the requirements for the degree
Doctor of Philosophy in Computer Science

The reason I did this was to make the awkward wording specified by the university (particularly the omission of the word "of" after the word "degree") somewhat more palatable. The last time I checked, the Theses and Dissertations Advisor had no objections to this change in line formatting, as long as the wording itself were not changed.[4]

[2] See the section "If the Dissertation Advisor Gives You Trouble" before you go to file your manuscript.

[3] Rich Wales isn't kidding. Another person on the Ficus project's thesis was (temporarily) rejected because he didn't spell out his middle name to match university records.

[4] The Theses and Dissertations Advisor will *not* accept a manuscript in which the word "of" appears after "degree" on the title page. See the section below, "Possible Future Developments", for more on this issue.

3.2 Copyright

In most cases, you will not need to include any special commands at all for the copyright page. It will be generated automatically, using your name and the year in which the degree is to be granted. The following commands exist to cover unusual situations.

- In the unlikely event that you have already published your thesis prior to filing, you should specify the actual year of copyright (the year of first publication) as follows:

  `\copyrightyear {`*year*`}`

  If this year is different from the year in which the degree is granted, LaTeX will include both years (separated by a comma) in the copyright notice.

  It is not necessary to include a `\copyrightyear` command solely because you are filing in December and will not be receiving your degree until Winter Quarter.

- If, for some unusual reason, you explicitly do not wish to include a copyright notice in your manuscript, you can suppress it via the following command:

  `\nocopyright`

  Note that, under the provisions of the Berne copyright convention, which went into effect on 1 April 1989, and to which the U.S. is a signatory, your thesis is considered to be copyrighted even if you omit the copyright notice.

The *Regulations for Thesis and Dissertation Preparation* currently do not permit the inclusion of the phrase "All Rights Reserved" in the copyright notice of a thesis or dissertation.[5] See the section below, "Possible Future Developments", for more on this issue.

3.3 Signature Page

The members of your thesis committee are specified via `\chair` and `\member` commands. Use a separate command for each committee member.

The committee chair is specified as follows:

`\chair {`*name*`}`

Each remaining committee member is specified as follows:

`\member {`*name*`}`

[5]This phrase is essential for proper copyright protection in certain South American countries which are signatories *only* to the older Pan American Copyright Convention. Although "All Rights Reserved" has no extra effect under U.S. copyright law, virtually all books currently published in the United States include this phrase in the copyright notice.

If the first two members of your committee are co-chairs, then use two `\chair` commands to list them.

The members of the committee should be named in the *same order* as they appeared on your "Nomination of Committee" form (with the chair or co-chairs first). LaTeX will output the names in the *opposite* order (as required by UCLA policy) when it generates the signature page.

Also, be sure that each committee member is identified using his or her *full name*—including middle initial, if any—as specified in the General Catalog.

3.4 Dedication and Acknowledgments

If you wish to include a *dedication* in your manuscript, specify it via the following command:

`\dedication` {*text*}

The *text* will be formatted by LaTeX in a `center` environment, centered vertically on a page by itself, and in regular type. If you wish to use *italics* (`\it`) or *slanted* (`\sl`) type for the dedication, you must specify this yourself.

If you wish to include *acknowledgments,* specify them via the following command:

`\acknowledgments` {*text*}

The *text* will be formatted by LaTeX using a regular environment (normal, justified margins).

Some people get confused as to what should be in a "dedication" and what should be in "acknowledgments". Here are some guidelines which should help:

- A *dedication* is a way of making particular mention of a person who is very close and special to you—such as a spouse, other family member, very close friend, or other person who has been particularly instrumental or supportive in your life, and without whose influence the degree work (or even your entire academic career) might never have been completed.

  A dedication should be used only when there is a close emotional bond between you and the person named. Unless the dedication is expected to have a deep emotional effect both on you and on the other person, you should seriously consider instead mentioning him or her in your "Acknowledgments", if at all.

  A proper dedication will almost always start out with the word "to", and will rarely if ever be a complete sentence (though it is perfectly proper to include a brief explanation of why the person named in the dedication has been important to you). A dedication should not normally be more than three or four lines long.

- *Acknowledgments* are a way of thanking people who were helpful and/or supportive in your work—such as professors or employers, as well as family members who have been helpful and understanding. This is also the place to mention instances in which you have obtained permission from others for the use of their copyrighted material in your thesis (see *Regulations for Thesis and Dissertation Preparation* for more detail on this subject).

  Acknowledgments should always be in the form of complete sentences.

3.5 Vita, Publications, and Presentations

Vita (life history), publication, and presentation information should be included only in doctoral dissertations—not in master's theses.

Each "vita" item should be specified via a separate command of the following form:

`\vitaitem {`*date*`} {`*text*`}`

Each "vita" item is printed in two columns: a narrow column on the left for the *date*, and a wider column on the right for the *text*.

The "vita" items should be specified in chronological order, as they will be printed in the order given.

Each "publication" or "presentation" item should be specified via a separate command of one of the following forms:

`\publication {`*text*`}`
`\presentation {`*text*`}`

Each "publication" and/or "presentation" item is printed as free-form text. If you wish the items to appear in any particular bibliography-like format, it is your responsibility to do all necessary formatting yourself.

The "publication" and/or "presentation" items will be printed in a single, unified list, in the order specified. The `uclathes` document style macros will automatically generate the proper heading (PUBLICATIONS, PRESENTATION, or PUBLICATIONS AND PRESENTATIONS), as appropriate.

3.6 Abstract

The text of the abstract should be specified via a command of the following form:

`\abstract {`*text*`}`

All of the "heading" information on the abstract page is taken from the corresponding data for the title and signature pages, and need not be specified a second time.

4 Things to Avoid

In order to ensure that your thesis manuscript will conform to University requirements, it is essential that you *do not* indulge in certain practices that would disrupt the standard format. The following list is not intended to be exhaustive, but indicates various common things which you must not do:

- Do not attempt to change the margins. Most `\setlength` commands affecting such values as `\textwidth`, `\textheight`, `\topmargin`, `\oddsidemargin`, or `\evensidemargin` will render your thesis unacceptable to the Theses and Dissertations Advisor.

- Do not disturb the page numbering. In particular, you must not attempt to use a page-numbering scheme in which the page number starts over for each new chapter (for example, page number "3-1" for the first page of Chapter 3).

  The University regulations are quite strict regarding the required method of numbering pages; any deviation from the default scheme will result in an unacceptable manuscript.

- Do not try to specify small type sizes. The default (12-point) type used by the `uclathes` style macros is the smallest acceptable size for a thesis manuscript.[6]

- Do not try to use marginal notes (`\marginpar` command). Absolutely no text—not even occasional marginal notes—is permitted to fall outside the official margins.

Additionally, the following practices—while not explicitly illegal—are either unlikely to give pleasing results or are liable to create serious problems, and should therefore be avoided or used with great care:

- *Double-column text* is not explicitly prohibited by the University guidelines. However, given the required type size for the body of the manuscript, double-column text will probably detract considerably from readability, and it should therefore not be attempted.

- *Running footers* are permissible. However, you must take special care to ensure that the footer text remains within the margins for regular text (that is, at least 1.25 inches from the bottom edge of the paper), and that the page number remains in its default position. In particular, the page number may not be moved up onto the same line with a running footer.

5 Line Spacing in Manuscripts

Traditionally, UCLA has required that the text of a thesis be double-spaced (3 lines per inch). While this requirement is generally considered to be appropriate for typewritten material, many people feel that double-spacing of the output of modern laser printers is not necessary to ensure easy readability of the manuscript, and may indeed detract from readability.

Even though *Regulations for Thesis and Dissertation Preparation* requires double spacing, it appears that the UCLA Theses and Dissertations Advisor will in fact accept manuscripts with one-and-a-half spacing (that is, 4.5 lines per inch) under certain conditions. In order to produce one-and-a-half spacing, add a comma and the word `single` to the `\documentclass` line, thusly:

```
\documentclass [PhD,single] {uclathes}
```

or

```
\documentclass [MS,single] {uclathes}
```

The `single` option will not affect the spacing of the *abstract.* The Theses and Dissertations Advisor continues to require abstracts to be double-spaced.[7]

[6] The occasional (default) appearance of smaller type in superscripts, footnotes, and the like is acceptable; don't worry about this.

[7] One good reason for this is that University Microfilms International (UMI), the company which microfilms dissertations, transcribes the abstract of each dissertation into their database system. UMI has stated that it finds double-spaced abstracts much easier for their personnel to transcribe.

If you intend to use the `single` option, it is imperative that you bring a sample of your manuscript to the Theses and Dissertations Advisor (141 Powell Library, 825-3625) for review and approval well in advance of the filing deadline—if at all possible, by the beginning of the quarter during which filing will take place. The material submitted for review should include all preliminary pages, as well as a representative sampling of the body of the text. This is crucially important, for two reasons:

- The last time I checked, the Theses and Dissertations Advisor insisted that anyone wanting to use closer than double line spacing must bring a sample to her office in advance of filing. This is something she has been encouraging students to do for years anyway (though with only limited success).
- In case, for some reason, your manuscript is found unacceptable, you will still have plenty of time to reprint it in a form that the Theses and Dissertations Advisor will allow you to file.

6 Formatting Your Thesis In Two Ways

Maintainer's note: This topic is new, which explains why it's not as carefully documented or implemented as Rich Wales' code. My apologies, but I wanted to graduate. Also, the "I" in this section refers to me, not Rich. —John.

One of the virtues of LaTeX is that it's mostly a markup language—the user indicates what things are, rather than explicitly how they should be rendered. I took advantage of this capability to format my thesis two different ways, an official "submission" version and a working version for me, my committee, and a technical report. I did this because the double-spaced, single column format *required* by the thesis committee was designed for typewritten theses of 20 years ago rather than good design rules of the professional design world.[8]

If you're interested in trying the "two-outputs" approach, look at the `demo2` example. `demo2rep` and `demo2the` are font-ends that format the main text in different ways.

7 Possible Future Developments

I am planning, in the near future, to approach the Graduate Division in order to propose three changes to the current *Regulations for Thesis and Dissertation Preparation*:

- Make the current *de facto* acceptance of one-and-a-half line spacing (4.5 lines per inch) official.
- Permit the phrase "All Rights Reserved" in the copyright notice, in order to bring the notice in line with what almost all book publishers do, as well as to give more protection to students from those countries which require this phrase as part of a legal and enforceable copyright notice.

[8] What's wrong with it? IMHO, double-spacing has nearly no place in the modern world (except in very drafty documents); double-spacing makes the document about 50% longer than it needs to be and it also make it difficult to fit some tables on a single page. Double-spacing is actually a saving grace, though, because it makes up for the fact the the lines are too wide to comfortably read.

- Add the word “of” after the word “degree” on the title page. If I cannot get this changed, I will propose that the sample title pages in the *Regulations for Thesis and Dissertation Preparation* be modified to put the degree name on a line by itself (start a new line after the word “degree”)—which is the way the `uclathes` style will do it already.

If any changes are adopted in these areas by the Graduate Division, I will modify the `uclathes` macros accordingly. In particular, if one-and-a-half line spacing becomes official, I will probably modify the macros to make such spacing the default.

Maintainer's note: These were Rich Wales' future developments. I do not know the status of either, and I am not pursuing them myself. —John.

8 If the Dissertation Advisor Gives You Trouble

As mentioned earlier, you should plan to bring a sample of your manuscript to the Thesis and Dissertation Office well in advance of your planned filing date. This is especially true if you plan to use the `single` line-spacing option—but you should do it in any case. The material you show the Advisor should include *all* the preliminary pages, as well as a representative sample of your text.

There is a possibility that the Theses and Dissertations Advisor may object to some aspect of your manuscript. If it appears that the Advisor is unwilling to accept some feature that is produced via the `uclathes` macros (for example, the selection of fonts on the preliminary pages, or the line spacing if you are using the `single` option), please get as much *specific* information as possible regarding what she is objecting to, and let me know right away.

Maintainer's note: I'm interested in hearing about objections the Theses and Dissertations Advisor has to the default format provided by `uclathes`*. Since it has been accepted for my dissertation, it is correct as of 1995. —John.*