U of S Computer Science Thesis Document Class for LaTeX Documentation for Version 1.4

Mark G. Eramian

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1 Introduction

This document describes the LaTeX document class `uofsthesis-cs` which formats LaTeX documents according to University of Saskatchewan College of Graduate Studies thesis formatting requirements. This document class is designed for LaTeX2ε and is maintained by Dr. Mark G. Eramian in the Dept. of Computer Science at the University of Saskatchewan (eramian@cs.usask.ca).

It is recommended that you review the University of Saskatchewan College of Graduate Studies thesis formatting requirements before using this document class. While this document class attempts to make it as easy as possible for your thesis to conform to these rules, it is ultimately the responsibility of the student to ensure that their thesis is properly formatted. The formatting rules can be found at `http://www.usask.ca/cgsr/current_students/thesis/ETD.php`.

For version history, please see the comment block at the top of the `uofsthesis-cs.cls` file.

2 Document Class Features

The `uofsthesis-cs` document class formats the document as follows (conforming to College of Graduate Studies Guide ETD thesis format guidelines.):

- Default 10pt font size.

- Default margins are 1 inch on all sides.

- Major section titles (e.g. Chapter headings) are 5cm from top of the page.

- All page numbers are bottom-center.

- Frontmatter page numbers are Roman, Arabic numbering starts on page 1 of chapter 1.

- Line spacing is 1.5.

- Frontmatter pages ordered according to CGSR Thesis Guide.

- Automatically formatted title page.

- Automatic inclusion and formatting of "Permission to Reproduce".

- Automatic inclusion of free-form Acknowledgements (optional)

- Automatic inclusion of free-form Dedication (optional)

- Automatic inclusion and formatting of table of contents.

- Automatic inclusion and formatting of list of figures (optional)

- Automatic inclusion and formatting of list of tables (optional)

- Assisted formatting of List of Abbreviations (optional)

- Equation numbers in chapter.number format.

- Bibliography may be included by method of user's choice (either bibitems or BIBTEX).

3 Class Options

This section describes the class options. Any combination of these options may be given.

`nofigurelist`	Suppresses the inclusion of the list of figures.
`notablelist`	Suppresses the inclusion of the list of tables.
`bound`	Causes the left margin to be wider. This option should be used when typesetting theses that are to be printed and bound.
`proposal`	Format document as a thesis proposal. The title page is modified, the permission to reproduce, acknowledgements, and dedication are suppressed.
`singlespace`	This option should be used *only* if the `proposal` option is also used. It causes the proposal to be typeset with single-spacing. This has been included to reduce printing costs for drafts of thesis proposals. *Final thesis proposals should always be produced at the default 1.5 spacing or double-spacing.* If this option is used without the `proposal` option, then a class warning is issued. This option cannot be combined with the `doublespace` option. *Note: single-spaced theses are not accepted by CGSR.*
`doublespace`	Typesets the thesis with double-spacing. Cannot be combined with the `singlespace` option.

Example:

```
\documentclass[nofigurelist, notablelist]{uofsthesis-cs}
```

causes the list of tables and list of figures to be suppressed.

This class also accepts all of the options that the report class accepts (e.g. `12pt`).

3.1 Compatibility with the `subfigure` Package

The `subfigure` package conflicts with the `tocloft` package that `uofsthesis-cs.cls` uses to change the appearance of the list of tables and figures.

If you want to use the `subfigure` package to, for example, allow multiple figure captions in a single figure environment, then you need to include the option `subfigure` to the `\documentclass` command, like this for example:

```
\documentclass[subfigure]{uofsthesis-cs}
```

This option will be passed through to the `tocloft` package and activate `tocloft`'s compatibility mode for `subfigure`. You can combine this option with any of the options above. Note that you still have to load the `subfigure` package using the `usepackage` command

4 Parts of the Document

4.1 Providing Frontmatter Information

The automatically formatted frontmatter requires some information to be provided by the user.

4.1.1 Required Commands

The following commands are **required** and *must* appear in the document preamble (ie - before \begin{document}):

\author{*auth*}	Sets the author of the thesis to *auth*.
\title{*title*}	Sets the title of the thesis to *title*.
\degree{*deg*}	Sets degree being sought to *deg*. *deg* should be one of \MSc or \PhD.
\defencedate{*cdate*}	Sets defence date to *cdate*. Should be a month and a year, e.g. June 2004.
\abstract{*abs*}	Sets abstract to *abs*. *abs* may be any valid LaTeX text and commands.

4.1.2 Optional Commands

The following commands provide information that is *optional* and may be included in the document preamble if desired:

\acknowledgements{*ack*}	Sets the acknowledgements to *ack* which may be free-form LaTeX. The argument is typeset on a separate page titled "Acknowledgements" at the appropriate place in the frontmatter as governed by CGSR guidelines. Spacing of this section defaults to the global document spacing.
\dedication{*ded*}	Sets the acknowledgements to *ded* which may be free-form LaTeX. The argument is typeset on a separate untitled page at the appropriate place in the frontmatter as governed by CGSR guidelines. Spacing of this section defaults to the global document spacing.
\loa{*abbrev*}	Includes a list of abbreviations. *abbrev* should be a list of \abbrev commands (explained in Section 4.9 below). This section is always single-spaced.
\department{*deptname*}	The title page displays "Department of Computer Science" by default. Use this command to change the department/discipline name.
\academicunit{*unittype*}	The title page displays "Department of Computer Science" by default. Use this command to change "Department" to something else (e.g. Division, College) if you are in a non-departmentalized unit.
\ptuaddress{*address*}	This determines the address that will be typeset at the bottom of the permission to use page. It indicates who should be contacted if they want a copy of the thesis. Example:

```
\ptuaddress{Head of the Department of Computer Science\\
176 Thorvaldson Building\\
110 Science Place\\
University of Saskatchewan\\
Saskatoon, Saskatchewan\\
Canada\\
S7N 5C9
}
```

The double backslashes at the end of each line are required to force line breaks. The default address is the one used in the above example.

4.2 Title Page

The title page is automatically formatted from the information provided in the frontmatter (see above).

4.3 Permission to Use

This page is automatically generated. It is a standard page required by CGSR. The address at the bottom of the page can be specified in the preamble using the `\ptuaddress` command.

4.4 Abstract

The abstract is typeset as given by the `\abstract` command.

4.5 Acknowledgements

The acknowledgements are typeset as given by the `\acknowledgements` command.

4.6 Dedication

The dedication is typeset as given by the `\dedication` command.

4.7 Table of Contents

A table of contents is automatically generated from the standard LaTeX sectioning hierarchy: `\chapter`, `\section`, `\subsection`, `\subsubsection`, and `\paragraph`. Subsubsections and paragraphs are not numbered, and therefore not included in the table of contents.

Proper use of the sectioning commands will result in an automatically generated table of contents. Section numbering is automatic. The table of contents is always single-spaced.

4.8 List of Figures and List of Tables

These lists are automatically generated from `\caption` commands in figure and table environments. Proper use of these environments and the caption command will result in an automatically generated list of tables and figures. These appear after the table of contents.

NOTE: CGSR requires that figure captions appear *below* the figure, but that table captions appear *above* the table. The positioning of the caption can be controlled by positioning the `\caption` command before or after the body of the table or figure body respectively.

Figure and table numbering is automatic. The lists of figures and tables are always single-spaced.

4.9 List of Abbreviations

A list of abbreviations may be optionally included by using the `\loa` command in the document preamble. The argument to `\loa` should contain a list of `\abbrev` commands. The `\abbrev` command requires two arguments. The first is the abbreviation, and the second is its explanation. Example: `\abbrev{QED}{Quad Erat Demonstrandum}`. An example is given in `thesis_template.tex`.

The list of abbreviations is always single-spaced.

A more robust way to create tables of abbreviations may be added in the future.

4.10   References

There is no automatic placement of the bibliography. The bibliography needs to be inserted after the final chapter and before any appendicies. Users of BIBTEX may include the reference list by using the \uofsbibliography command. This command takes one parameter – the name of the .bib file. For example, the command

$$\uofsbibliography\{mybibfile\}$$

constructs a references from the file `mybibfile.bib`. Note that the filename extension is omitted. You do not need to include a chapter heading for the references. This is added by the \uofsbibliography command.

Alternatively, you may include the bibliography either as a list of \bibitem's. In this case, you should immediately precede your list of \bibitem's with the command:

$$\uofsbibliographynobibtex$$

This will properly format the chapter heading for the references.

If you wish to change the title of the bibliography section put the following command somewhere before the \uofsbibliography (or \uofsbibliographynobibtex) command:

$$\renewcommand\{\bibname\}\{chaptername\}$$

where *chaptername* is the title you want. The default is normally sufficient.

4.11   Appendices

Typeset appendices as normal chapters, beginning each with a \chapter{} command. Precede all appendix chapters with the command:

$$\uofsappendix$$

This will change chapter numbering to use letters, 'A', 'B', 'C', etc. Otherwise, typset appendices as normal chapters.

5   Typesetting The Frontmatter

For proper formatting the \maketitle and \frontmatter commands must appear immediately after \begin{document}.

6   Thesis Document Template

A thesis template file (`thesis_template.tex`) is included with this package to start you off. Good luck!

7   Contacting the Author

Any questions or bug reports pertaining to this document class should be directed to Dr. Mark Eramian (eramian@cs.usask.ca).