

# dalthesis: A Thesis Document Class for Dalhousie University\*

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## Abstract

`dalthesis` is a L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> document class that is intended to meet the requirements for thesis style and format at Dalhousie University. It sets the required margins and interline spacing, and produces the proper title, signature and permission/copyright pages, among other things.

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<sup>‡</sup>Author of updated L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> `dalthesis` class. The author wishes to thank Gary Sneddon for his comments, suggestions, testing of `dalthesis`, reading of the documentation, and the list goes on.

# 1 Introduction

A thesis submitted at Dalhousie University must adhere to the regulations set by the Faculty of Graduate Studies [2]. In some cases, a department or other faculty may impose additional regulations. The Faculty of Engineering, for example, outlines its requirements in [1]. The purpose of `dalthesis` is to aid production of a thesis that satisfies these regulations regarding style and format. As for content of the thesis, that's your job!

Use of `dalthesis` requires a basic understanding of the  $\text{\LaTeX}$  typesetting system. For the reader unfamiliar with this system, the definitive reference manual is Lamport's book *LaTeX: A Document Preparation System* [4]. An in-depth discussion of some of the finer points of  $\text{\LaTeX}$ , as well as a description of many  $\text{\LaTeX}$  packages, can be found in the book *The LaTeX Companion* by Goossens, Mittelbach and Samarin [3]. And for the financially-challenged reader<sup>1</sup>, there is the freely available document *The Not So Short Introduction to LaTeX 2 $\epsilon$*  by Oetiker [5].

Section 2 describes commands that control the typesetting of your thesis. An example of how to use `dalthesis` is given in Section 3.

## 2 Using dalthesis

The preamble of the  $\text{\LaTeX}$  input file must contain the line

```
\documentclass{dalthesis}
```

which selects the `dalthesis` class. This class recognizes the following options:

`10pt` | `11pt` | `12pt` Chooses the normal type size of the document. Contrary to the standard classes, the default for `dalthesis` is `12pt`, since that is the recommended size for thesis submission.

`final` | `draft` These options have the same effect as in the standard classes, with the exception that in `dalthesis` the `draft` option additionally executes the command `\draft`. (See page 7 for a description of this command.) The default is `final`.

`notitlepage` | `titlepage` The `notitlepage` option suppresses typesetting of the thesis title page, which may be useful when printing draft copies. The default is `titlepage`, which includes the title page in the output.

Any other option is passed directly to the `report` class (the class on which `dalthesis` is built). Therefore, any valid option for the `report` class may also be used with `dalthesis`.

For the purposes of `dalthesis`, a thesis is considered to have three primary divisions: the front matter, preface matter, and main matter. The front matter is comprised of the title, signature and copyright pages; an optional dedication page; the table of contents; and the list of figures and tables. The preface matter includes

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<sup>1</sup>What student isn't? :-)

the abstract and acknowledgements (though technically the acknowledgements section is not required). It can also include other material if the contents of the thesis so warrant (e.g., a list of symbols and abbreviations may be appropriate). The main matter is the remainder of the thesis. It includes the main body of text and a list of references, as well as endnotes and appendices (if applicable).

## 2.1 Front Matter

The front matter is initiated with the appropriately-named command

```
\frontmatter
```

Specifically, this command automatically creates the title, signature, and copyright pages, and produces the table of contents and lists of tables and figures. Some of these pages require information such as author name, thesis title, names of examining committee members, submission date, and so on. The commands to specify this information are described in the following sections.

### 2.1.1 Basic Information

The thesis title and author's name are specified with standard L<sup>A</sup>T<sub>E</sub>X commands:

`\title{thesis title}` Defines the title of your thesis. The title will appear in large print on the first page, and also on the signature and copyright pages. If it is too long to fit on a line, it will automatically be split into separate lines. If you wish to specify explicit line breaks, use the `\\` command inside the title. For example,

```
\title{Very Long\\Title\\Split Over\\Several Lines}
```

Make sure that there is no space before `\\`.

`\author{author's name}` Defines your name as you wish it to appear in the thesis.

The next set of commands allow you to specify further basic information that will be displayed in the front matter. All of this information has been assigned default values. As such, you only need to use those commands for which the default values are not appropriate. In particular, a student in the Department of Mathematics and Statistics at Dalhousie University need not use any of the following commands.

`\dept{department}` Defines the author's department. The default is "Mathematics and Statistics".

`\faculty{faculty}` Defines the degree granting faculty. The default is "Graduate Studies".

`\university{name of university}` Defines the name of the university. The default is "Dalhousie University". You can specify line breaks for long names, if desired.

`\address{university address}` Defines the address of the university. The default is “Halifax, Nova Scotia”.

**Note:** The Faculty of Engineering sets additional regulations for thesis submission [1]. In particular, the appearance of the front matter differs slightly from that suggested by the Faculty of Graduate Studies. The `dalthesis` class adheres to both sets of regulations by adjusting its behaviour based on the value of the `\faculty` macro. That is, once an engineering student specifies

`\faculty{Engineering}`

in his or her L<sup>A</sup>T<sub>E</sub>X file, `dalthesis` acts accordingly.

### 2.1.2 Graduation and Submission Information

Since more than one date is required in the front matter of a thesis, the singular command `\date` is of no use here. The `dalthesis` class provides three date-related commands.

`\submitdate{month day, year}` Defines the date that the thesis is submitted to the Faculty of Graduate Studies. This is typically given as a month and year, for example:

`\submitdate{April 6, 2000}`

If omitted, it will be set to the current month and year. Note: this date is not used if `\faculty` is set to Engineering; use `\defencedate` instead.

`\defencedate{month year}` Defines the date that the thesis is defended. This is typically given as a month and year, for example:

`\defencedate{April, 2000}`

If omitted, it will be set to the current month and year. Note: this date is only applicable to Engineering students.

`\copyrightyear{year}` Defines the copyright year of the thesis. Normally, this is the same year in which the thesis is submitted. Faculty of Engineering students should set this to the year of the defence. If omitted, it will be set to the current year.

`\convocation{month}{year}` Defines the month and year of the convocation. If omitted, it will be set to the following May or October after the submit date.

### 2.1.3 Degree Specification

Not surprisingly, the front matter also includes the name of the degree being sought (and hopefully ascertained!). To specify the degree, use one of the following commands.

`\bschon` Sets the degree name to “Bachelor of Science, Honours” and the degree initial to “B.Sc. (Hon)”.

`\ma` Sets the degree name to “Master of Arts” and the degree initial to “M.A.”.

`\msc` Sets the degree name to “Master of Science” and the degree initial to “M.Sc.”. This is the default degree.

`\masc` Sets the degree name to “Master of Applied Science” and the degree initial to “M.A.Sc.”.

`\phd` Sets the degree name to “Doctor of Philosophy” and the degree initial to “Ph.D.”. This command also changes the signature page to include an external examiner.

For degrees not included in the above predefined names, `dalthesis` provides two generic commands.

`\degree{Full Degree Title}` Defines the full name of the degree.

`\degreeinitial{F.D.T.}` Defines the degree’s initials.

For example:

```
\degree{Master of Business Administration}  
\degreeinitial{M.B.A.}
```

#### 2.1.4 Signatures

The signature page is where members of the examining committee sign their names indicating that the thesis is accepted. The printed names on this page are specified with the following commands.

`\supervisor{supervisor’s name}` Specifies the research supervisor’s name.

`\examiner{external examiner’s name}` Specifies the external examiner’s name; used only for a Ph.D. degree.

`\reader{reader’s name}` Specifies the name of a reader. Use this for all other members of the examining committee.

The `\supervisor` and `\reader` commands are repeatable, and the order in which the names are specified is the order in which they are listed on the signature page.

For example, if you use

```
\supervisor{Georg Friedrich Bernhard Riemann}  
\supervisor{Carl Friedrich Gauss}  
\reader{Jane Doe}  
\reader{John Smith}
```

then “Georg Friedrich Bernhard Riemann” will be the primary supervisor, “Carl Friedrich Gauss” will be the cosupervisor, and “Jane Doe” will be listed before “John Smith” in the list of readers. Provisions have been made to allow at most two supervisors and at most five readers.

### 2.1.5 Preface Material

The front matter also includes the abstract and acknowledgements (though technically the acknowledgements section is not required). These sections are produced with the following environments.

`\begin{abstract} text \end{abstract}` Generates an abstract with *text* as its contents on a page by itself.

`\begin{acknowledgements} text \end{acknowledgements}` Generates an acknowledgements section with *text* as its contents.

Other preface sections are catered for with the command

`\prefacesection{Section title}`

The title is typeset similar to that of chapter titles, but not numbered. This command, as well as the above environments must appear between the `\frontmatter` and `\mainmatter` commands.

## 2.2 Main Matter

The main matter is initiated with the command

`\mainmatter`

Specifically, this command starts the main body of the thesis on arabic page 1. Standard L<sup>A</sup>T<sub>E</sub>X sectioning commands can be used thereafter; for example:

`\chapter{Chapter title}` Produces a numbered chapter section.

`\section{Section title}` Produces a numbered section of a given chapter.

`\subsection{Subsection title}` Produces a numbered subsection of a given section.

`\appendix` Place this command before your first appendix chapter. Use the `\chapter` command thereafter. Appendix sections are numbered “A”, “B”, etc.

The `dalthesis` class also provides the following command.

`\nonumchapter{Title}` Produces a chapter section that is not numbered, which may be appropriate for an introductory chapter. This is used in the same way as the `\chapter` command.

Standard L<sup>A</sup>T<sub>E</sub>X provides `\chapter*`, which is similar to `\nonumchapter` in that it produces an unnumbered chapter section. However, `\nonumchapter` produces an entry in the table of contents; `\chapter*` does not.

## 2.3 Miscellaneous Commands

With the exception of `\dedicate`, the following commands are primarily for producing draft copies of a thesis.

`\dedicate{First Line\\Second line\\Last line.}` Produces an optional dedication page. (Alternatively, one can use the `dedication` environment.) This must be placed before the `\frontmatter` command.

`\draft` For printing draft copies of the thesis. Page headers include the text “DRAFT” and the date and time that the thesis was compiled. Also specifies draft and date/time on the title page.

`\notitlepage` Suppresses printing of the title page. Useful for draft copies to cut down on printing.

`\nofront` Specifies not to print the signature, permission and dedication pages, as well as the table of contents, and the lists of figures and tables. Useful for draft copies to cut down on printing.

`\nobib` Suppresses printing of the bibliography. Useful for draft copies to cut down on printing.

Finer control of what is printed in the front matter of the thesis is available with the following commands.

`\nosignaturepage` Suppresses printing of the signature page.

`\nopermissionpage` Suppresses printing of the permission page.

`\nodedicationpage` Suppresses printing of the dedication page.

`\notableofcontents` Suppresses printing of the table of contents.

`\nolistoftables` Suppresses printing of the List of Tables.

`\nolistoffigures` Suppresses printing of the List of Figures.

## 2.4 Local Configuration

Customization of the `dalthesis` class can be done in a configuration file `dalthesis.cfg`. If this file exists, it is loaded at the end of the `dalthesis` class, and so coding provided there supercedes that of the class file. The main purpose of the configuration file is to allow system administrators to set things like the department name or default degree on a site-wide basis.

## 2.5 Some Final Comments

With regard to interline spacing the thesis regulations allow some leeway: text should be “one-and-one-half spaced or double-spaced” [2]. The `dalthesis` class uses interline spacing that is 1.37 times normal (except in the figure and table environments where normal spacing is required). This spacing can be changed with the following command<sup>2</sup>:

```
\linespread{1.5}
```

or whatever you want instead of 1.5. Note that for a 12 pt font size, one-and-one-half spacing is approximately 1.241 times normal, while double-spacing is approximately 1.655 times normal. But before you change the interline spacing consider this: 1.37 has been the default line-stretch in `dalthesis` for over 10 years!

While care has been taken to ensure that regulations have been met, the final authority on this matter is the Faculty of Graduate Studies.

**It is strongly recommended that all theses be brought to the Graduate Studies Office to be checked before copies are made so that if corrections are necessary, only one copy of the thesis will have to be changed. Also, close to the thesis deadline dates (April, September, and December), it is suggested that an appointment for checking thesis be made and a 48 hour turnaround time be allowed for checking.**

*Regulations for Submission of Theses  
Faculty of Graduate Studies*

On that note, should anyone encounter a problem with `dalthesis`, please notify `clyde@mathstat.dal.ca`. One final comment. The signature page produced by `dalthesis` for a Ph.D. thesis is an example only. The actual page will be provided by Grad Studies at the time of your defence. Therefore, for Ph.D. students only, you might as well include the `\nosignaturepage` command in your  $\LaTeX$  file.

## 3 Example of Use

This example is only intended to give you a quick overview of how to use `dalthesis`. The example provided shows the `12pt` type-size being used. This is required for submission copy, but `10pt` or `11pt` may be used to get smaller draft print. Note, however, that the front material may not look good in smaller print. If no value is given, `12pt` is assumed.

```
\documentclass[12pt]{dalthesis}

\begin{document}

\title{How to Write Theses}\
```

---

<sup>2</sup>The `\linespread` command will not, however, take effect unless it comes before `\begin{document}` or a font-size-changing command such as `\small` or `\normalsize`.



```

        With Two Line Titles}
\author{John Henry Candidate}
\submitdate{April 6, 1999}
\copyrightyear{1999}
\convocation{May}{1999}
\supervisor{John Parker}
\reader{John Green}
\reader{John Smith}

\dedicate{This is the optional\\
          dedication page.\\
          Break lines up\\
          like this.}

\frontmatter

\begin{abstract}
  An abstract is required in all theses.
  Make sure that it fits on one page!
\end{abstract}

\begin{acknowledgements}
  This is the acknowledgements.
  It is optional.
\end{acknowledgements}

\mainmatter

\chapter{Introduction}
...

\chapter{Conclusions}
...

\appendix
\chapter{A Long Proof}
...

\end{document}

```

A more complete example of how to use `dalthesis` can be downloaded from the web at <http://www.mathstat.dal.ca/~clyde/dalthesis/exthesis/>.

## References

- [1] Faculty of Engineering, Dalhousie University, Halifax, Nova Scotia. *The Preparation of Graduate Theses. A Manual on Thesis Submission and Format*, March 2001. Available at <http://www.dal.ca/~engiwww/>. 1, 2.1.1

- [2] Faculty of Graduate Studies, Dalhousie University, Halifax, Nova Scotia. *Regulations for Submission of Theses*, Revised May 2003. Available at <http://www.dalgrad.dal.ca/forms/TDC.cfm>. 1, 2.5
- [3] Michel Goossens, Frank Mittelbach, and Alexander Samarin. *The L<sup>A</sup>T<sub>E</sub>X Companion*. Addison-Wesley, Reading, MA, USA, 1994. 1
- [4] Leslie Lamport. *L<sup>A</sup>T<sub>E</sub>X: A Document Preparation System*. Addison-Wesley, Reading, MA, USA, Second edition, 1994. 1
- [5] Tobias Oetiker. *The Not So Short Introduction to L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>*. Version 3.20, August 9, 2001. Available at <http://www.ctan.org/tex-archive/info/lshort/english/>. 1