

Writing a thesis, revising a draft, journal publishing

April 9, 2013

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Section 1

Writing a thesis

Thesis

A thesis is an unusually long paper containing a **detailed discussion** of a unifying hypothesis regarding the work you have undertaken in your research.

Whether it is for Honours, Masters, or PhD, your thesis must describe your own work and thinking, and will be the one publication where you prove that you can **work independently, accurately, and critically**.

Readers

Your thesis is likely to have very few readers: you, your supervisor, perhaps one of your fellow students, your examiners, and maybe some younger research students looking at extending your work.

However, it could be vitally important that it be well done as your supervisor and perhaps your examiners are likely to be your referees for future positions.

Regulations

Check with your department for the University regulations governing the writing of a thesis.

- **CS&SE** has guidelines for the production of an Honours thesis using both Word and L^AT_EX.
<http://undergraduate.csse.uwa.edu.au/year4/Current/project.html>
- **Maths&Stats** has no official guidelines, but a recommended L^AT_EX template is available.

Also available are guidelines on research ethics and research misconduct.

Assessment guidelines

CS&SE:

<http://undergraduate.csse.uwa.edu.au/year4/Current/Assessment/projectAssessment.html>

Maths&Stats:

<http://www.maths.uwa.edu.au/students/honours/assessment>

Start early!

Do not underestimate the amount of time it takes to write a thesis and to revise your draft copies. It always takes longer than you think.

An Honours student can reasonably expect to spend at least 1 month writing.

At the very latest after your first semester exams

Start thinking about your dissertation!

What should you be doing now?

- collecting references
- outlining contents
- thinking about the global picture (Introduction)
- starting to write parts of it
- giving drafts to your supervisor

Structure of a thesis

- Title Page
- Acknowledgements
- Abstract
- Preface (optional)
- Table of Contents
- List of Figures
- List of Tables
- Chapter 1 to n
- Bibliography
- Appendices

The Title of My Thesis

M. Y. Surname

At the bottom of the page, prescribed words should appear, given in the thesis template.

2013

The Title of My Thesis

M. Y. Surname

This report is submitted as partial fulfillment of the requirements for the Honours Programme of the School of Computer Science & Software Engineering The University of Western Australia

2013

The Title of My Thesis

M. Y. Surname

*This thesis is presented for the partial requirements
of the degree of Bachelor of Science with honours of
the University of Western Australia.*

2013

Acknowledgements

Thank those who went out of their way to help you,
and acknowledge any financial help.

Abstract

“An abbreviated, accurate representation of the contents of a document, without added interpretation or criticism and without distinction as to who wrote the abstract” .

Abstract

An informative abstract answers, in about 100 – 250 words, the following questions:

- Why did you start?
- What did you do, and how?
- What did you find?
- What do your findings mean?

If your paper is about a new method, the last two questions might be replaced with:

- What are the advantages of the method?
- How well does it work?

Preface

Only include a preface if the work you are presenting has been published elsewhere or you need to establish how much of the work is your own.
(Not very common for a Honours Thesis)

Table of Contents, List of Figures, of Tables

Automatic using the commands:

```
\tableofcontents
```

```
\listoffigures
```

```
\listoftables
```

Up to here the pages are numbered with Roman numerals (i,ii, etc.). Page 1 starts at first page of Chapter 1. This will be automatic if you use the template.

Chapters in CS&SE

Chapter 1 Introduction Give overview of the problem, state the hypothesis that your thesis presents.

Chapter 2 Review of the literature Present previous work in this area that is relevant to the approach you have taken or that makes a complete story.

Guidelines:

[http://undergraduate.csse.uwa.edu.au/
year4/Current/Assessment/
literatureReviewMarkingGuidelines.html](http://undergraduate.csse.uwa.edu.au/year4/Current/Assessment/literatureReviewMarkingGuidelines.html)

Chapters in CS&SE

Chapter 3 Methods Describe methods and materials: e.g. details of existing theory, mathematical developments, experimental procedures, details about equipment.

Chapters in CS&SE

Chapter 4 to n-1 **Results** Explain the experiments you have conducted or the results you have found. Introduce each experiment with the particular hypothesis you were testing in that experiment. List the results clearly, perhaps in tables or graphs, and discuss how they relate to the hypothesis of the experiment.

Chapter n **Discussion and Conclusion** Draw together all your results and discuss how they relate to the unifying hypothesis introduced in the Introduction.

Chapters in Maths&Stats

Chapter 1 **Introduction** Give overview of the problem, put it in context (similar to literature review), state the hypothesis that your thesis presents.

Chapter 2 to n Up to you.

Bibliography

List all the references cited in the body of your thesis. Details on the construction of a bibliography were given in Lecture 5.

Appendices

If you want to include lengthy material related to your theme but not essential to the development of your argument, put that material in an appendix.

- code or pseudocode,
- a Users Manual,
- an important data file,
- detailed tables,
- diagrams and images not essential to the body of the text.

A [CS&SE](#) honours thesis should also include as an appendix the original research proposal.

Length

Only counting the chapters:

CS&SE: approximately 50 page, up to 15,000 words for a 24 point project.

Maths&Stats: between 25 and 50 pages.

If you find you have more, consider using appendices.

L^AT_EX Template

A template is available.

CS&SE:

[http://undergraduate.csse.uwa.edu.au/year4/Current/
Project/dissertation.html](http://undergraduate.csse.uwa.edu.au/year4/Current/Project/dissertation.html)

Uses special classfile `cshonours.cls` and bib style `cshonours.bib`.

Maths&Stats: come and see me with a USB stick.
Special class file `uwathes.cls`.

Including chapters

```
\include{Chapt1}  
\include{Chapt2}  
\bibliography{mybib}
```

Have the file mybib.bib in same folder.

Including chapters

Advantage of not working all in one giant file:
you can “turn off” (using %) the chapters you are not working on for faster compiling.

Disadvantage: you have to remember to go to the main file before compiling, as you cannot compile the chapters themselves.

Writing the Thesis

Before you begin writing you are likely to wonder whether you have enough to write about. After you have started the biggest problem is to remember where you are in the mass of material you are trying to describe.

You have to find for yourself how to manage that. For instance you can construct something akin to your table of contents before you start writing.

Writing the Thesis – many drafts

When you have a draft that you are happy with (can be just for one chapter), show it to your supervisor or a fellow student before the next draft is written. Make sure you use a spelling checker before you ask someone else to read your work.

There might be large changes suggested at this stage, so a second draft is highly likely.

And even many more . . .

Section 2

Revising a draft

Revising a draft

Paul R. Halmos:

Every single word that I publish I write at least six times. [Interview in "Paul Halmos: Celebrating 50 years of mathematics (1991)"]

Revising a draft

All your writing should be revised before submission, whether it is a paper, a thesis, a poster, etc.

The aim of revision is

- to **correct** spelling, grammar, and typographical errors
- to **remove ambiguities**
- to ensure **correct use of pointers** to references, theorems, equations, and figures, etc.
- and to make your writing **clearer**, more concise, and more forceful.

Many drafts

Good writers inevitably work through a **number of drafts**.

It is virtually impossible to produce a perfect first draft – that is, something that would not benefit from revision.

Give it time

After you have finished the first draft, **put it away for a few days**, or give it to a friend to read. A fresh reading will pick up many small errors.

Different levels

Analyse your draft in multiple ways, and at multiple levels:

- Read it aloud – is it **rhythmic**?
- Read it at high speed – does it **flow** well?
- Is the overall **shape** correct? Are paragraphs too long, or too short? What about sentence length? Do your sentence lengths vary?

Different levels: page level

- Does any page look too densely covered in ink, or too sparse?
- Do your equations, theorems, and algorithms stand out?
- Does your code have a good shape with matching indentations?
- Do your tables, graphs, and images look cluttered or do they stand out?
- In particular, are your figures large enough to be read without straining the reader's eyes?
- Are there any overhanging lines?

How to do the rewriting?

Anyway you like: e.g.

- on a computer,
- on a print-out (with wide margins and large inter-line spacing),
- on a blank sheet of paper.

Revision on a print-out

My advice is to revise your writing **on paper**, not electronically (after having used a spelling checker first).

Print out your draft paper with wide margins and double spacing.

In \LaTeX , double spacing is produced by the command

`\renewcommand{\baselinestretch}{2}` placed before the `\begin{document}` command.

On Paper

Revise in **coloured ink**, and if it is a small mark, for example an added comma, place an **asterisk** in the margin to make sure you spot it later.

Keep in mind

- Eliminate words, phrases, and sentences that add nothing to the meaning or the argument. Every word must serve a purpose.
- Replace long words by equivalent short words. For example, can you replace “interrogate” by “ask”, or “requirement” by “need”? However, do not be afraid to use a long word if it is exactly the right word for the context.
- Eliminate dangling participles.
- Change passive voice to *active voice*

Keep in mind

- Are sentences and paragraphs in the right order. Remember that the opening sentence of a paragraph sets the idea for that paragraph. The emphasis of the idea comes at the end of the paragraph.
- Do your definitions come before the first time it is used?
- Make sure that any abbreviations or acronyms are defined at the first use, and that such abbreviations are used consistently thereafter.

Keep in mind

- Ask whether your words are in the right order. Commonly misplaced words are **only** and **also**.

Peter also writes programs.

Peter writes programs also.

Only I hit him in the eye yesterday.

I only hit him in the eye yesterday.

I hit only him in the eye yesterday.

I hit him only in the eye yesterday.

I hit him in only the eye yesterday.

I hit him in the only eye yesterday.

I hit him in the eye only yesterday.

I hit him in the eye yesterday only.

Keep in mind

- Remove unnecessary repetition, especially between the abstract and the introduction.
- Check that all your claims are fully supported by the facts you present.
- Check that your mathematics is correct.

Keep in mind

- Check that you have made good use of citations, giving credit where credit is due, but not scattering your pages with reference pointers.
- Check that your equations, theorems, algorithms, tables, figures and references are properly numbered. Are your cross-references correct? Is every citation matched with a reference, and vice versa?

Section 3

Journal publishing

Journals

In [Maths&Stats](#), you publish your research in research journals.

In [CS&SE](#) you have a choice between a journal, conference proceedings or poster. For the last two options, advice is similar as for journals. Read Robyn Owen's notes, and direct any questions to Rachel Cardell-Oliver.

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The notes on this topic on the unit website are very dated.

Choosing a journal

Many journals to choose from. Important to choose one that best matches the content of your paper. Choose a **good quality**, high prestige, international journal for maximum exposure.

Choosing a journal

Quality can be measured by a journal's **Impact Factor**, which is a measure of the average number of citations made to recent articles (preceding two years) published in the journal.

In mathematics, this is often quite low as it takes years to get citations usually.

The **IF** is quite controversial, but universities love to use it as a way to “measure” quality.

Choosing a journal

- Seek advice on where to publish.
- Review recent issues to see if your topic matches contents.
- Examine the references section in your paper for common journals.
- Check time-to-publish. For some journals it can be as long as two years or more! (Check “received” date with published date in recent issues.)

Submitting

- Read the instructions to author.
- Use correct format or template.
- Either a form to fill online, or by email to one of the editors.
- Use a cover letter if you want to give any extra information to the editor. (For instance if sending an email, mention which journal you are submitting to.)

Submitting

You should get an acknowledgement of receipt (automatic for online form, can take up to a couple weeks if email).

It is also a good idea to put the paper on the ArXiv, to publicise your work and “claim” it.

`arxiv.org`

People involved

- Managing Editor (deals with administration)
- Editor (selects referees; makes final decision on acceptance)
- Referees (between one and three experts in the paper topic)

Reviewing process

Referees will consider the following points:

- Is the paper too long?
- Is the paper well organised?
- Do the conclusions follow from the results? Is it mathematically correct.
- Has the author cited all relevant references?
- Are all the tables and figures necessary?
- Are the title and abstract fully descriptive of the text?

Reviewing process

This process can take a very long time, sometimes over a year. (Difficulty to find referees, referees taking a long time...)

If online process, you can usually see an up-to-date status for your paper: sent to referees, reports sent to the editor, etc.

Possible recommendations

- Accept with few or no revisions.
- Accept provided that revisions are carried out according to the reviewers' (and/or editor's) specific comments.
- Reject but allow re-submission after major revision.
- Reject.

Very few papers get the first recommendation so do not be disappointed or discouraged.

Revisions

- Check the time limit.
- Write a cover letter addressing ALL referees' comments (that will make the next round of reviewing much faster).
- Don't attack the referees or the editor.
- Don't be intimidated by them either.
- Stand up for your viewpoint if you think you are right.

Resubmitting

If your paper was rejected, try to improve it (take into account referees' comments if you received any), and then resubmit to another journal. This happens to every scientist!

Forms

Once your paper is accepted you'll have some forms to sign:

- copyright form,
- reprint order forms (very rare nowadays that you get paper copies for free),
- payment forms if the journal is pay-to-publish.

Proofs

After a few months, you will receive proofs that need to be checked **carefully**, usually with a **short deadline!**

Take this work seriously, even if you sent your latex source, as sometimes non-scientist type-setters mess it up!

Proofs

Check format

- unmatched parentheses,
- wrong fonts,
- misspelt words,
- missing punctuation, especially commas,
- incorrect hyphenation,
- widow header or word,
- O for 0, l for 1, etc.
- bad line breaks in mathematical equations,
- incorrect formatting,
- missing symbols,
- errors in numbers in tables.

Good practice

- Keep a copy of your manuscript, a reprint (if you receive any), all referees' and editor's comments.
- If you are working at university, submit the publication to the departmental secretary, for the Research Publication Database.
- Make downloads available through web (arXiv for instance, but check the copyright form to know what you are allowed to do).