

GUIDANCE ON HONOURS PROJECT REPORT WRITING

This document describes an organizational structure for the production of an honours project report. The honours project report is an academic undertaking and as a result involves the following specific structural guidelines. Students are often surprised to learn that examiners are typically more interested in the process rather than the resulting product. This is because they are trying to ascertain the level of academic maturity reached. It may be useful to regard the honours project as an apprenticeship; there is much to be learned from your supervisor about how to approach independent investigation, how to organize your work and how to present the results in an appropriate style.

EXPECTED CONTENT

Title Page

This should contain the following information: Title, full name of author, degree that it contributes towards, industrial or other collaboration if appropriate, month and year of submission. Note that the title page should not show a page number.

Abstract

This should be not more than one page in length. The abstract should allow the reader who is unfamiliar with the work to gain a swift and accurate impression of what the project is about, how it arose and what has been achieved.

Contents List

This should give a complete list of what the report contains starting with the abstract (the title page is not included in the contents list).

List of Tables/Figures

If the report contains figures or tables a list of these should be provided. The list should give the table or figure number, the title of the table or figure and the page number. If only a few tables and figures are present, they may be treated on one page. Remember that all figures and tables used must be referred to in the text.

Acknowledgements

It is normal to thank those who have given help and support (typically your supervisor). Typically, it is unneeded, unwarranted, and inappropriate to thank your examiners! Keep acknowledgements short and business-like.

Introduction/Background

This section introduces the reader to the subject area in the project. It may include such things as how the need for the system etc was identified, the nature of the application area, the relationship with any industrial partner and so on. A brief outline of the project work should also be included. Some evidence of reading around the

area is expected. A plan of organization for the project should be stated in the introduction section.

Methodology (Main Body of the Report)

This section should be divided into a number of chapters and sub-chapters. Each of these should contain a reasonably separate topic of discussion and be arranged in a logical sequence. The linkage between chapters should be stated clearly at the beginning and/or the end of each chapter to show the relationships between chapters.

Conclusion

The conclusion chapter should state briefly the achievements of the project, the conclusions and suggestions for further work.

Appendices

These should be used for reference material, such as selected pieces of research data and other information which is too bulky, or would detract from the flow of the text, if included in the main body of the document. Reference material that will be consulted from many different places in the document should be placed in the appendix. Otherwise, put the information into a figure or table and keep it close to the text that refers to it. It is typically unnecessary to include extensive computer code anywhere in your report.

References

There should always be a list of all books, articles and technical resources consulted. The use of all source material should be explicit in the report. This means that every item in the reference list will be referred to in the report and every item mentioned in the report will have an entry in the reference list.

SUMMARY OF EXPECTED CONTENT

Abstract

| Content | Advice |
|--|--|
| The whole project in miniature. ♦ State main objectives – What did you investigate and why? ♦ Describe methods – What did you do? ♦ Summarize important results – What did you find out? ♦ State main conclusions – what do your results mean? | Do not include, references to figures, etc., information in the report, background information. Extract key points and condense material. |

Introduction

| Content | Advice |
|---|--|
| ♦ Describe the problem investigated. ♦ Summarize relevant research to provide context, key terms, and concept so the reader can understand the experiment. ♦ Review relevant past research to provide rational for your work. | Move from general to specific – relate problems in the real world to your research. Make clear links between the problem and the solution. Be selective in choosing studies to cite. |

| | |
|---|--|
| ◆ Briefly describe your research – design, research, hypothesis, etc. | |
|---|--|

Methodology

| Content | Advice |
|---|---|
| <ul style="list-style-type: none"> ◆ How you studied the problem and what you used – materials, subjects and equipment. ◆ How you performed the research – methods and procedure. | Provide enough detail for replication of your work. Order procedures chronologically. Use past tense to describe what you did. Don't mix results with procedure. |

Conclusion

| Content | Advice |
|--|--|
| <ul style="list-style-type: none"> ◆ Outline the success of your project when compared to the objectives that were set. ◆ Suggest further work for your research area. ◆ Summarise the most important findings. | Make explanations complete. Avoid speculation that cannot be tested in the foreseeable future. Discuss possible reasons for expected or unexpected findings. |

Although the above outline is generally used in report writing, some students may wish to consider presenting their report in a book format that would include several chapters. For example:

- ◆ **Chapter 1: Introduction**
 - Motivation
 - Problem description
 - Objectives of the work
 - Organisation of the report

- ◆ **Chapter 2: Background**
 - Details of relevant theory
 - Review of past/reported work
 - Brief introduction of the proposed work/solution

The section of "Methodology" can be covered in one or two chapters.

- ◆ **Chapter 3:** (Appropriate title related to research)
 - Main work, e.g., solution approach, theory, simulation software, circuit design, etc.

- ◆ **Chapter 4:** (Appropriate title related to research)
 - Results and findings based on the method described in Chapter 3

- ◆ **Chapter 5: Evaluation**
 - This could be optional, depending on the content of the research. This chapter provides an objective evaluation/comparison of the student's work with others.

◆ **Chapter 6: Conclusion**

- Review of the project and reiteration of important findings
- Suggestion for future work

DOCUMENT FORMAT

The information in this section explains how the report should look. It is far easier to absorb these standards, set them up on a word processor and use them throughout the preparation of the document than to attempt a major rearrangement of material at the last minute.

Length

The overall length will vary with each project depending on the nature of the work. However, 50 pages for the main body of your report is an upper limit. This should be sufficient to explain what you have done. If you find that your report is too long, it is probably because you are not explaining yourself clearly enough. Do seek advice in individual cases, and remember, quantity is no substitute for quality.

Paper

The entire report must be submitted on A4 size paper.

Printing

The report should be printed on one side of each page only. The print quality should be dark and clear.

Margins

Left margin 25mm. Top, bottom and right margins 20mm.

Justification

Right and left margins should be justified (giving a straight edge to the text on both sides).

Font size

Use a Times New Roman or similar style font, a medium size font (point size 12 or similar) should be used for most of the document.

Pagination

The report must carry sequential pagination throughout, including appendices. The page number should be on the top right margin of each page. The title page is counted in the numbering, but bears no page number.

Page Breaks

Try to ensure that these occur in sensible places. There is no need to take a new page for each main section heading but you should do so for new chapters. Never let a page break separate the last line of a paragraph. Try to ensure that, if possible, enumerated lists (a, b, c, etc) are not split across pages.

Header

A header should be placed at the top of each page apart from the title page. In addition to the page number, the document header should include the candidate's name, qualification sought and calendar year.

Paragraphs

These should be blocked (no indentation on the first line) and separated by a single blank line (double-spaced).

Citations

Where it is desired to quote a sizeable chunk (around 30 words or more) from the work of another author, the quotation should be blocked and indented 0.5" from the left and right margin. It should also be separated from the preceding and following text by a blank line. There is no need to use quotation marks.

If this was an extract from a publication about report writing that I wanted to include, it would be set in this way to distinguish it from my own words. When quoting direct from a source it is essential to provide a full reference, including page number, so that readers can locate the passage if they so desire. (Author, date, page number)

This authors name would appear in the references. If the quotation omits some material between the source's start and end points, this is indicated by dots as follows:

If this was an extract from a...it would be set this way. (Author, date, pg.)

When quoting small amounts, the quotation can be incorporated in the text, without the need to offset it. In this case quotation marks are used to delineate the words copied. For example, according to Chan (1999) "it is of paramount importance to acknowledge the work of others". Any of these forms of quotation should be used exceedingly sparingly, and probably not at all.

A more typical way to cite from another author's work is to refer to it, but not quote from it. The next sentence gives an example. According to Chan (1999) the use of formal methods has little to offer. This approach is more usual in both science and engineering.

Care to acknowledge the work of others is of paramount importance in all areas of life, but especially in academic work, where the currency is not physical objects, but ideas. Use of work of others without attribution is tantamount to stealing. Reusing the text of another author without indicating it is a quotation is plagiarism and will be treated as such.

Line Spacing

The text of the document should be at least 1.5 spacing and no more than double-spaced.

Headings and Legends

Section and subsection headings should be emboldened. Major Headings should be printed in point size 14. Legends (these are the figure and table identifications) should be emboldened and centred, but not enlarged.

Sectioning

Sections and subsections are used to organise the document into cohesive chunks for the reader. Give them meaningful headings. Never subdivide beyond three levels e.g. 3.1.1.2 is too much. Below is an example of the numbering system used in an academic report.

| | |
|-------|---------------------------------|
| 1 | Chapter 1 |
| 1.1 | Section 1 of Chapter 1 |
| 1.1.1 | Sub-Section 1 of Section 1 |
| A | Division A of Sub-section 1 |
| i.) | Sub-Division i.) of Division A |
| ii.) | Sub-Division ii.) of Division A |
| B | Division B of Sub-Section 1 |
| 1.1.2 | Sub-section 2 of Section 1 |
| 1.2 | Section 2 of Chapter 1 |
| 2 | Chapter 2 |

Tables and figures

These should each be sequentially (and separately) numbered throughout the document. They should be centred and labelled with identification number and title. What the table and figure is intended to show should be clear. If a graphical representation is used, axes must be clearly labelled. It is common to include a line or two under the table identifier to clarify contents. If necessary to fit the contents of a table on one page, 10-point font size may be used; alternatively the page may be printed in landscape mode.

Appendices

These should be sequentially numbered starting with Appendix 1. Pagination continues from the main body of the document through the appendices.

References

There are a variety of ways to reference material used in a report. Below is just one example of academic referencing. If there is a lengthy list (several pages), use 10-point font size, otherwise use 12 point. References can be given in the following format. (Consult your supervisor for alternative formats.)

Books (notice that it is the book title that is italicised).

Bloggs, J. 1981. *Advances in Computing*. London: Academic Press.

Book Chapters (this is to cite a chapter in an edited book)

Bloggs, J. 1981. The intelligent machine. In B.F.Black (Ed), *The Future of Computing*. Edinburgh: Napier university Press.

Journal Article (notice, in the first example, the journal article title is italicised, the figure following is the volume number (normally emboldened), with the issue number after the oblique and then the page numbers)

Bloggs, J. 1981. The evaluation of the interface design, *Journal of man-Machine Studies*, **4/1**, 99-150

Or

Clarkson, P.J and Acarnley, P.P., "Instabilities in Dual Stepping Motor Systems", J.IERE, vol.57, n.5, pp.200-206, Sept./Oct. 1987.

Both of the above examples are correct. Please use only one style in your report.

Web page. You should include the author (individual or organisation), the date of first posting (if available), title (usually the text delimited by the <title> tag), URL, and the date which you accessed the information

Wikimedia Foundation, Inc. "Citation – Wikipedia, the free encyclopedia", <http://en.wikipedia.org/wiki/Referencing>. Accessed: 16 May 2007.

Or

Silverman, J. May 9, 2007. "Howstuffworks 'What's a beer battery?'", <http://science.howstuffworks.com/beer-battery.htm>. Accessed: 16 May 2007.

STYLISTIC AND GRAMMAR ADVICE

Apostrophes

One of the most common mistakes in student writing is incorrect use of the apostrophe ('), as in PC's to mean a number of PCs. It is used in English to form contractions such as didn't (did not), can't (cannot) and it's (it is). These uses should be avoided in academic writing and the words written out in full. The apostrophe is also used to denote possessive case, as in *the dog's bone* or *the student's assignment*. The rule here is that of the intended noun is singular (one dog) the apostrophe is placed before the s. The examples above refer to a single dog and a single student respectively. If the intended noun is plural and regularly formed, the apostrophe is placed before the s as in *dogs'* (of the dogs). However if the noun has an irregular plural, e.g. child – children, the apostrophe is placed before the s as in *children's*.

Acronyms

Computing/engineering are fields in which acronyms are heavily used to avoid repetition of long technical terms, e.g. RAM, LAN, VDU. Terms like VDU are now so commonly used by the population at large that it is rapidly becoming admissible to use them without explanation. However, most acronyms are familiar only to specialists within sub-fields of computing/engineering. When using an acronym for the first time, always precede it with the expanded version.

Colloquialisms

These are chatty, idiomatic or slang expressions that are appropriate in informal conversation but have no place in academic writing. For example;

Once Mr Chan pulled his finger out, the team started to come together better and eventually we managed to hand something in that is pretty reasonable considering we didn't know each other much before this report.

A related point is that in academic and technical writing the use of the first person (I) is avoided as much as possible. This rule may be relaxed occasionally, when to observe this rule would cause the text to become too stilted. In similar way, avoid referring to the reader as 'you'.

Grammar

Do be careful to write in full sentences and to proof read the document to ensure not only that the text is grammatically sound, but also that it means exactly what was intended.

Jargon

Try to strike a good balance between use of jargon and appropriate use of technical terms. There is no merit in using so much obscure terminology that the document is virtually unreadable, but on the other hand, failure to use key words properly can lead to unnecessary verbosity and tends to give an unprofessional impression. It is important to be consistent in the use of terms, to define them if necessary and to use the same term for the same concept throughout.

Sexism

Unfortunately English has no neuter pronoun that can be used to refer to a singular person whose gender is unknown. Recently, with increased awareness of masculine bias in language, efforts have been made to eradicate inappropriate use of the masculine or feminine pronouns and to introduce neuter versions of the offending words. Please use the plural form *they/them/their* to replace *he/she/his/her*.

Spelling

There should be no excuse for spelling mistakes in a word processed document. Spelling errors create a bad impression. Always use a spell checker, they are invaluable for picking up typographical errors as well as genuine spelling mistakes. Note, however, that spelling checkers cannot detect cases where the wrong word happens to be a real word e.g. *from – form*. So a careful proof read is necessary.

ORGANISATIONAL HINTS

The key to success is good organisation. Computing facilities make the production of professional quality documentation viable. Many students make the mistakes of sitting down at the end of their research to the difficult task of 'typing up' the report. A much better way is to set up the framework for the document early in the research. In a PC environment is advisable to create a separate file for each major section for the following reasons:

- ◆ So that backing up is straightforward
- ◆ Because large documents containing graphs/tables can be slow to scroll through and cause other unnecessary processing delays
- ◆ If disaster strikes losses will be contained (always maintain multiple, physically separate back-ups)
- ◆ It is easier to take advantage of multi-windowing

If the framework of a document is in place early, notes can be made in the sections yet to be written as ideas occur. Likewise notes should always be made of early reading. Inevitably something read early on and discarded will turn out to be crucial later – large amounts of time can be wasted trying to recall where the item was seen and then searching for it. A good plan, which will save time in the long run, is to create a reference file. This can be the start of your reference section.

Finally, a first draft should be regarded as a rough approximation, to be honed into shape. By writing throughout the report's development and not in one mighty rush at the end, there is plenty of time to reflect on the shape of the document and to return to earlier parts for editing.

Kellie Fagan, 30 May 2001

Revised Michael Tse, 16 November 2001

Revised Michael Small, 16 May 2007