

DEPARTMENT OF BIOLOGY

UNIVERSITY OF PRINCE EDWARD ISLAND

GUIDELINES FOR THESIS PREPARATION
(Revised March 2009)



This guide has been prepared to aid Biology Honours students in the organization, preparation and typing of the Honours thesis.

Generally, the department follows the style set out in '*Scientific style and format : the CBE manual for authors, editors, and publishers*' published by the Council of Biology Editors (now the Council of Science Editors); see www.bedfordstmartins.com/online/cite8.html

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1. Regulations for the Preparation of the Thesis

GENERAL RULES

Copies of the thesis should be submitted in good, clear type on one side of the paper only. Original copies must be generated by a laser printer or high quality ink-jet printer on 8.5 x 11 size white paper with a hard, bright, and even surface. **Students are responsible for the costs of printing and duplicating their thesis drafts and the final thesis copy. The department will contribute to the cost of copies to be bound.**

Double space all text material, except for:

- long quotations, which may be single spaced*.
- Table and Figure legends which should be single spaced.
- Table of Contents, List of Tables, and List of Figures, which can be single or spaced but with a space between entries or sections.
- Literature Cited, which can be single or double spaced (though if single spaced there should be a space between entries).
- **Do not** add extra spaces between paragraphs. Indent the first line of each paragraph by one “indent”.

The entire thesis must be in the same type and be at least 10 characters per inch (cpi) or 12 point (pt) in size.

- **Special Note:** this means that the font on the figures and tables should match the font of the thesis
- Font sizes on figures should also be large enough to be clearly visible, though these need not always be 12 point.

Characters that are not available on standard typewriters or word processing packages (such as found in some mathematical equations) may be neatly added to the typescript by hand with black ink.

* **Important Note on direct quotes:** avoid using direct quotes unless the exact wording is necessary to the meaning of the passage (for example, specific definitions). In all other cases, you should paraphrase the material.

SPELLING

Either American or British spelling is acceptable provided that it is used consistently throughout. Special effort should be made by all candidates to present their thesis reasonably free from corrections. Remember, this document will be bound and placed into the library for future researchers to use as reference.

ACCEPTABLE FORMS OF REPRODUCTION

Copies produced on a photocopier, laser printer, or high quality ink-jet printer are acceptable. Whatever method of reproduction is used, all copies must be clean, and all typed material and line drawings must be clear and legible.

PAGINATION

Every page of the thesis, including references and appendices, must be numbered, except the title page and some pages with photographic plates (see below). The pages must be arranged consecutively. If you don't know how to do page numbering, check with your supervisor.

Do not type a number on the title page, but designate that page as "i". The other "preliminaries" (Acknowledgments, Table of Contents, etc.) numbered (consecutively) will be numbered as ii, iii, iv, etc.

Textual pages (beginning with the first page of the text, and including pages with figures, tables, references, etc.) will be numbered with Arabic numerals (1, 2, 3...).

Page numbers must be placed at the top centre or top right of the page. Activate the page numbering on your word processor at the beginning of the typing process, since addition of page numbers at a later time can disrupt page organization. Please note that pages with photographic plates may not require numbering. Consult your Supervisor to see if it is required for your thesis.

MARGINS

- the left margin on all pages (including figures and tables) **must** be 1.5 inches (3.8 cm) to accommodate binding
- All other margins **must** be 1.0 inches (2.5 cm)
 - please note that the binding process may cut as much as 1/4 inch (0.6 cm) off of all margins, so text or page numbers that are too close to the edges of a page will simply be cut away.
- New Chapters (e.g. Introduction, Methods, Results...) should begin on a new page, and for those pages only, start two inches (5 cm) from the top of the page.

Pages printed in landscape format **must** face outward; i.e. the legend must be placed on the outside of the page.

JUSTIFICATION

- Center your text on your title page
- Use left justification for your document. Avoid full justification, since it can result in unusual spacing between words and sections.

UNITS

Units throughout the thesis should conform to the SI Metric system. Abbreviations (e.g. cm for centimeter, m for meter, L for litre, mL for millilitre) may be used, but must conform to the Canadian Standards Association.

- the abbreviated unit should follow the number and a space, i.e. 5 cm, not 5cm.

FIGURES

Figures include graphs, charts, maps, drawings, photos, and generally anything that is not a table. Please note that if figures are provided in colour, they should still reproduce well in black and white, since people using the bound copy in the library will probably photocopy sections for reference. **Any illustration in the thesis will be referred to as a Figure, and numbered as Figure 1, Figure 2, and so on.** Any Figures (graphs, charts, maps, drawings, photos) that are used, must be provided for all copies of the thesis.

Do not place figures on a page that already contains text; each figure should be on a separate page.

Figure numbering and placement:

- All figures must be numbered consecutively in Arabic numerals as Figures (e.g. Figure 1, Figure 2, etc.).
- Each Figure should appear after it is referred to in the text, but as close as possible to the section in the text that refers to it.

Note: the thesis text must run continuously on pages before and after figures. Do not end a page before a figure only part way down the page... all pages must read normally.

Figure Legends

The “Figure Legend” is the part-sentence, or caption, that describes what is in the figure for your reader. This should not be confused with a “key” which explains different stippling patterns or line types for your reader. A figure legend should describe the figure fully, so that your reader knows what the figure means without having to read about it in the text of your thesis (see the example on the next page).

The Figure number and legend should be typed and placed below the figure, towards the left hand margin of the figure or the left margin of the page (see below).

If the legend consists of more than one line, the second and all following lines should be indented to line up with the start of the text, and it should be single spaced, as shown below:



Figure 1. Map of Canada, with the arctic region highlighted at the top of the map.

Hint: Consult the manual for your word processor to set up an indented paragraph or a hanging paragraph without having to use the page-return and indent keys. Otherwise, every time you change printers, you will have to reformat your hanging paragraphs

IMPORTANT NOTE:— each piece of data or information in your thesis must be given in only one format. Therefore, if data are given in a graph in the thesis, you may not also list them in a table, unless further summary is given (e.g. for clarification) that differentiates the data from that presented in the table.

Oversize figures (or tables)

Oversize illustrations are acceptable only if they can be neatly folded into the thesis to conform to the 8.5 x 11" sized paper, and standard margins. Pages may be folded either vertically or horizontally (or more rarely, both), but must not be overly bulky or untidy.

Preparation of Figures

All graphs, line drawings, etc. should be generated by an acceptable graphics package using ink-jet/laser printer output, or drawn in black ink on white paper. Consult your supervisor for access to the most appropriate software package for your research.

Graphs: Graphs should be clear and simple, and not crowded or cluttered. Avoid 3-D graph types (e.g. in bar graphs or pie graphs) when 3-dimensional data are not being used. Remember that graphs can be in colour, but should be able to be reproduced in black and white.

More than one graph can be placed on a page, as long as they are all covered under a single figure legend (e.g. as an “a”, “b”, and so on). If multiple graphs are placed on a page, make sure first that they are actually related to each other, and that each is clearly labelled.

Note: The Biology Dept. does not provide specialized software packages, other than those provided on the network or in the Honours study room. If specialized software for graphics is needed, it must be provided by the supervisor.

Lettering: Letters and numbers must be from a computer graphics package, lettering set (e.g. Letraset), or in black ink, using a lettering guide or template. Lettering should be consistent throughout the thesis, i.e. the font for your figures should be consistent with that of the text.

Line Art: Line diagrams (e.g. maps, diagrams of sampling gear) must be clear and uncluttered, and in clean black ink with labelling from a graphics package or lettering set. Note that an effective way to prepare these diagrams is to do a high quality scan of the diagram, then use the graphics package (e.g. Adobe Photoshop®, CorelDraw®) to do the labels.

Photographs: Photographs may be printed directly onto high quality bright paper, following the same rules for margins as given for all other pages. If loose photos are to be mounted into the thesis, they must be secured to the page with good quality adhesive or with dry mounting tissue. Digital photographic plates may be printed on 8.5 x 11" ink-jet photographic paper and inserted as such into the thesis; plates prepared using darkroom techniques should be printed on appropriate sized photographic paper, and inserted directly.

Since a photographic plate is a composite of several photographs (which may be referred to in various locations within the text of the chapter), it may be placed at the end of the section in which it is first referred to, or it can be inserted among the text in the same manner as other types of figures. In certain cases, it will not be possible to fit the figure legend on the same page as the plate of photographs. If this occurs, the legend for the figures is inserted as a separate page before the corresponding plate and must be numbered; the photographic plate does not have to be numbered.

TABLES Tables include anything presented as a list.

Table set up:

No vertical lines are used in tables. Horizontal lines are used to indicate columns, and at the beginning and end of the table (see example below). Refer to Campbell and Ballou (1990) *Form and Style; Theses, Reports, Term Papers, 8th Edition* (available in the Library) for an excellent discussion on the preparation of tables.

Table 1. Type of elective courses preferred by first year science students at the University of Prince Edward Island

Type	Percent of students preferring each type
Music	10
Science	25
Business	10
Arts	50
Nursing	5

Use the Table format function in your word processing program to prepare your tables. Consult your supervisor for hints on table construction, if you're not familiar with the methods.

Tables that are continued on the next page: Sometimes tables don't fit onto a single page (see example on the next page). In that case, you will set the table up as above with a horizontal line at the bottom of the table on the first page, but write the word "continued" at the bottom. On the next page, write "Table 1, Continued", and then give the column headers again, and finish your table.

Example of a continued table:

Table 2. Area of study preferred by science students at the University of Prince Edward Island

Type	Percent of students preferring each type
Medicine	35
Veterinary Science	25
Pharmacy	10
Chemistry	10
Physics	5

Continued

(New page)

Table 2. Continued

Type	Percent of students preferring each type
Physiotherapy	10
Optometry	25
Ecology	10
Genetics	5

Table Numbering:

Tables should be numbered consecutively with Arabic numerals, and placed in the order that they are referred to in the text. **The table should be on a separate page** following the reference in the text (never on the same page as text), but as close as possible to it.

Usually, tables or figures are placed on the page immediately following the page on which they are first mentioned in the text. However, if multiple figures or tables are mentioned on a page in the text (e.g. in the Results), place the figures and tables in the order that they are mentioned.

Table Legends: Table numbers and legends appear above the table, but otherwise should follow the pattern given for figure legends.

Table footnotes

If footnotes are used with a table, they should be typed below the bottom horizontal line of the table. All footnotes should be single spaced, the first line indented 3 spaces, and each footnote referred to by a superscripted Arabic numeral or a symbol.

EQUATIONS

If equations are used in the text, they should be numbered, clearly differentiated from the text, and all parts explained (see the example below).

The phi scale is related to particle size diameter (mm) according to the following equation (Gordon *et al.*, 1992):

$$D_{\text{phi}} = -\log_2 (D_{\text{mm}}) \quad (1)$$

where D_{phi} = diameter of particle (phi), and D_{mm} = diameter of particle (mm).

2. Guidelines for Arrangement of the Thesis

PARTS OF THE THESIS

Every thesis is composed of three parts: the "preliminaries", the text, and the reference material. Each part has several sections and must be arranged in the following order:

Title Page
Abstract
Acknowledgments
Table of Contents
List of Tables
List of Figures
List of Abbreviations (where necessary)
Introduction
Literature Review
Methods (or Materials and Methods)
Results
Discussion (includes Summary and/or Conclusion)
Literature Cited
Appendices (if applicable)

All pages except the title page are numbered (refer to the section on Pagination, on p.2). Pages for the first seven sections (Title page through List of abbreviations) are numbered with small Roman numerals (e.g. i, ii, iii...). The title page is page i, but no page number will appear on the title page; start with page ii for the Abstract. The remaining sections will be numbered with Arabic numerals.

PRELIMINARY PAGES

Title Page

Information on the title page must be complete, and must be neatly and symmetrically arranged using 12 point font (see example below). Centre the information on the page as shown below (remembering to leave a 1.5 inch (5 cm) margin on the left. The lettering may be given in bold text for emphasis. Give the year that the degree will be conferred, not the year during which the research was carried out (if they are different).

<p style="text-align: center;">Full Title of Thesis</p> <p style="text-align: center;">Your Name Department of Biology University of Prince Edward Island Charlottetown, PEI, Canada</p> <p style="text-align: center;">A thesis submitted in partial fulfilment of the requirements of the Honours Programme in the Department of Biology</p> <p style="text-align: center;">This Thesis is Accepted</p> <hr style="width: 20%; margin: auto;"/> <p style="text-align: center;">Dean of Science University of Prince Edward Island</p> <p style="text-align: center;">May 200x</p>

Acknowledgments

Your thesis should include a brief statement of thanks for any special or non-routine aid received. It is particularly important to acknowledge the sources of funding support for the project. Place this section on a separate page, headed “Acknowledgments” (centred at the top of the page). Text should be double-spaced.

Table of Contents

This section should be headed Table of Contents, and will list the titles of the chapters or sections exactly as they appear in the body of the thesis, along with the page numbers on which they appear (see below). Literature Cited and Appendices should also be included.

Chapter titles and major headings are placed at the left margin of the page, but subheadings should be indented. Whenever a title or sub-title is longer than one line, each line after the first is single spaced and indented.

Table of Contents

Abstract	ii
Acknowledgments	iii
Table of Contents	iv
List of Tables	v
List of Figures	vi
List of Abbreviations (where necessary)	vii
Introduction	1
Literature Review	3
subheadings as needed	4
Methods (or Materials and Methods)	23
subheadings as needed	24
Results	29
subheadings as needed	30
Discussion (includes Summary and/or Conclusion)	45
subheadings as needed	46
Literature Cited	53
Appendices (if applicable)	57

Hint: when doing a table of contents or a List of tables or figures, you need to place “dot leaders” between your text on the left and the number on the right. You can put these in with periods, but this can be time consuming, and result in formatting problems if you change printers. Word Perfect has an easy way to do this:

- place your cursor at the end of your text on the line
- choose Format from the top property bar
- choose “Line” from the drop down menu, then “flush right with dot leaders”.

The program will automatically put in your dots, and you can add the page number without changing the formatting.

List of Tables

These should follow the Table of Contents and generally follow the same format. Place the Table number at the left margin, along with the caption, and the page numbers at the right margin.

Table legends should appear exactly as they appear with each table. Single space each Table legend, but double-space between entries. Use an Indented or Hanging Paragraph (see hint, p. 6, and examples below) for each entry, and see the hint above for an easy way to put in the dot leaders).

Table 1. Type of elective courses preferred by first year science students at the University of Prince Edward Island 21

Table 2. Area of study preferred by science students at the University of Prince Edward Island 22

(the first example above is an indented paragraph, and the second is a hanging paragraph)

List of Figures

Follow the format given for the List of Tables, above.

Abstract

The thesis must contain an Abstract. This section follows the Title Page, and should be headed by the word “Abstract”, which will be centred at the top of the page.

The Abstract should give, in essay style, a short statement of the thesis problem, a brief note of the methods used, and a condensed summary of the findings. The statement of the problem and summary of findings are most important. The abstract should be approximately 200 words and should never exceed one page in length.

You should not refer to previous work in your Abstract, since this is a summary of your own project, not an introduction to the study. Therefore, there are usually no citations of literature in the abstract. Do not refer to tables or figures in the Abstract, but just summarize the major findings.

THE TEXT:

Each major division of the thesis (Introduction, Literature Review, Materials and Methods, Results, Discussion, etc.) is considered to be a separate chapter. Each chapter should begin on a new page with the heading centred, typed in capital letters, and positioned 2" (5 cm) from the top of the page.

Subdivisions and Headings:

- first order: should be centred, and given in full caps.
- second order: upper and lower case letters, underlined, and begin at the left margin without terminal punctuation.
- third Order subdivisions: as above, but provide a colon, then run into the paragraph, and not be separated from them.

If desired, headings and subheadings may be numbered, but numbering should be consistent throughout the text. Further emphasis can be added by putting the headings in bold text.

Example:

MAJOR DIVISION HEADING

First Order Subdivision Heading

Second Order Subdivision Heading

Third Order Subdivision Heading: This heading is run into the paragraph it begins.

Spacing: there should be an extra space between sections to help differentiate between the sections. Do not put spaces between paragraphs unless they represent separate sections.

“Orphaned headings”: these refer to headings that have been “orphaned” on a page without the text to which they refer. Proof your document on the computer screen (see below) before printing it off so that you can format the document to ensure that headings appear on a page with at least a couple of lines of the text to which they refer.

Hints:

1. Every time you change printers, the formatting of your document will change. Before you print the document, check to make sure the formatting is correct (in Word Perfect) by
a) clicking on the printer icon at the top of the screen,
b) choosing your printer from the list of printers, then
c) clicking on **close** rather than ‘print’. That puts you back in your document, but selects the printer you will be using.

Introduction and Literature Review

There should be a short (1-2 pages) introduction to the thesis, which gives some brief background and a statement of the problem being investigated. This section should contain a clear statement of the objectives of the study so that the reader can proceed with the nature and aim of the study in mind

A review of past work is usually necessary to validate the importance of the problem (i.e. the reason for the author's interest in the problem) and give enough background for a reader to understand the study, its methods, and its ultimate conclusions. Only the significant observations and conclusions of the literature need to be included, and only where they are pertinent to the current study. Be sure, however, to include pertinent background material on all aspects of the study.

The study objectives must be clearly stated in the introduction, but they can be repeated in slightly different form, and/or be accompanied by a statement of hypotheses in the Literature Review. The objectives and hypotheses must flow naturally from the background information given.

All references to source material must be accompanied by the appropriate reference(s), given as (Author Year); see section on Literature cited, below.

Methods (or Materials and Methods)

This section should contain information on the materials and methods used in the study, including methods of data analysis. Give enough information so that the study could be repeated by another researcher based upon the details given. Consult with your advisory committee to see how much detail should be included.

If the study is a field study, a Study site section may also be included as a subheading of the Methods chapter; be sure to give precise site details and descriptions, including latitude and longitude, and maps where possible.

Figures illustrating techniques or equipment can also be included in this section.

Results

This section has two parts: the written text and the presented results (Figures and Tables).

Text portion: The text portion of the results points out the important trends. Note here that this section should not just list numbers or facts that are clearly given in the presented results, but should summarize the trend that you want your reader to get from it. For example, do not say “The size at time 1 was 2.5 cm, at time 2 was 3.5 cm, at time 3 was 4 cm.... (Fig. 1)”. Summarize the trend in a statement like “The plants grew exponentially over time (Fig. 1)”.

Every results trend statement must refer to the presented data from which it comes (e.g. as “Fig.1”, or “Table 1”, placed in parentheses after the trend statement), except in some instances where the data are not appropriate to a table or figure (e.g. a single data point; check with your supervisor if you are reporting a trend without associated data).

Never just say something like “The data are presented in Fig.1”. You must summarize the trends that you want the reader to be aware of.

Presented data: This section refers to the data that are presented in the tables and figures (remember that the word “data” is plural, so should be used as a plural form, i.e. the data are, not the data is. “datum” is the singular form).

Only summarized data should appear here, for example, averaged data that are directly pertinent to the study objectives. If there are additional data that should be included but are peripheral to the major points, which or consist of background raw data which could be valuable for reference, but not for your objectives, these should be placed in the appendix. Any table or figure included here must be referred to in the text portion (by number), and all trends pointed out in the text should be clear from the presented tables or figures.

Important point: Do not attempt to *interpret* the results here, simply report them. If you find yourself using words like “because” or “due to” in this section, you are probably giving material that should be in the discussion. Also - there should be no methods in this section; if you are reporting methods for the first time in this section, they must be moved to the methods section.

Discussion

This is the section where the results are interpreted, by making reference to other data collected (e.g. physical data such as temperature or humidity) or to previous findings in the literature. Generally, figures or tables should not be referred to here, since the discussion will focus on trends already pointed out in the results. **Do not repeat your results here;** just explain or interpret them.

Note, however, that it is possible and sometimes useful to construct summary figures or tables that aid in the interpretation of your results (for example, summarizing material from a number of literature sources), and this kind of figure or table may be referred to here.

All references to source material must be accompanied by the appropriate reference(s), given as (Author Year); see section on Literature cited, below.

Summary and/or Conclusion

Summarize the significant findings of the study in this section. The Summary and Conclusions section may be set up as a subheading within the Discussion, or may be a chapter on its own, depending on the length and emphasis. Consult your supervisor to see which is more appropriate.

An effective way to summarize or conclude your study is to go back to your original objectives, and summarize whether the objectives or hypotheses were met, and if not, why not. Do not make reference to literature citations here. Possible recommendations for further study in the field of investigation may also be included.

Literature Cited

This section is not a general bibliography, but is a list of the references you have specifically cited in the text. Include only those references you have cited (including references from figures or tables that you may have modified from a published source), and make sure you cite all references you have referred to.

References will be listed alphabetically by the surname of the first author, then of subsequent authors. Multiple citations by the same author(s) will be placed in chronological order. The reference will contain (in this order): the names of all authors (including first names or initials), the year of publication, the Title of the publication, the Journal (or Publisher for books), and the volume and page numbers (or total number of pages, for books).

Note: there are many minor variations on the above format that are correct; you must choose (in consultation with your supervisor) the one that you will use, but the references must be given in consistent format. For example, if you choose a format where all authors names are given with surnames first, followed by their initials (rather than initials, then surnames), you

must do this for every citation (i.e. you can't have some citations with 2nd and subsequent authors having initials before the surname, and some with initials following). Similarly, if you choose to include the issue number for the journal for some of your references, you must do so for all.

The first line of the reference will begin at the left margin, subsequent lines will be indented (hanging paragraph style), and single spaced. Citations may be single spaced, but should have a space between each citation.

Note that paper (or chapter) titles are not underlined, and only the first letter of the first word is capitalized. Book titles may be underlined, and all words begin with a capital letter This format is at the discretion of your Supervisor and depends upon the journal format in which your thesis may be published. It is of utmost importance to remain consistent.

If no author is given for a publication, it may be listed as Anonymous or by the institution that published it (e.g. Agriculture Canada).

The reference must be set up in the Lit. Cited section exactly as it is referred to in the text (e.g. if you say "PEI 2003") in your text, it must be listed as "PEI 2003" in the Literature Cited, and not as "Prince Edward Island Department of Agriculture 2003"). Choose a consistent format.

Punctuation (e.g. commas *versus* semicolons) is at the discretion of your committee, but must be consistent.

Web sites: web site addresses may change and many are not peer-reviewed, so it is critical that you check with your supervisor to see if specific web sites are acceptable. As a general rule of thumb, to be acceptable, web sites should have a clear author, be dated, make reference to literature citations, and have some indication that the material has been reviewed. Government web sites are usually acceptable, but be careful of citing web sites that have no way to check their credibility.

Examples of different types of citations:

Giberson, D.J., B. Bilyj, and N. Burgess. 2001. Species diversity and emergence patterns of nematoceros flies (Insecta: Diptera) from three coastal salt marshes in Prince Edward Island, Canada. *Estuaries* 24: 862-874. (Journal article, multiple authors)

Giberson, D.J. and N. Burgess. 1995. Impact of *Bti* treatment on invertebrates and their avian predators on salt marshes on PEI. Report to World Wildlife Fund, Toronto, March 1995. University of Prince Edward Island, Charlottetown, PE, Canada. 60 pp. (unpublished report)

PEI Government. 2005. Selected Census Data, Prince Edward Island, 1986 - 2001. Prince Edward Island Government Website, accessed May 29, 2005. http://www.gov.pe.ca/photos/original/af_stat03tab1.pdf (Web site)

Leader, J.P. 1976. Marine Caddisflies (Trichoptera: Philanisidae). pp. 291-302 *In* Cheng, L., (editor). *Marine Insects*. North-Holland Publishing Co., Amsterdam. 581 pp. (Chapter in edited book)

Lehmkuhl, D.M. 1972. Change in thermal regime as a cause of reduction of benthic fauna downstream of a reservoir. *Can. J. Fish. Aquat. Sci.* 29:1329-1332. (Journal article, single author)

Resh, V.H. and D.M. Rosenberg. 1984. *The Ecology of Aquatic Insects* Praeger Publishing, New York, 625 pp. (Book)

Notes – Authors initials must be followed by periods. They can follow the surname for all names, or they can be placed in front of the surname for 2nd and subsequent authors (as shown above). Write out the word "and" before the last author.

- Book names may be underlined or not, but all words in a book title must be capitalized, and those in a journal reference should not.
- if you abbreviate journal names, you must use the recognized abbreviation for the journal, and must abbreviate all of journal names.
- chapters from edited books must include the chapter author, and page numbers of chapter, as well as the editor(s) name(s), etc.
- unpublished reports must have enough information to be able to access the report, e.g. the authors address.
- web sites should be valid sources (government or peer-reviewed and dated); in your citation, give author, title, contact URL and date of access.

Citation of references within the text - Author Year format

Most Biological journals in North America use the Author-Year system in preference to an author-number or a simple number system. Therefore, the author-year system will be followed for theses in the Department of Biology. This system has a distinct advantage in the preparation of a thesis, especially if many references are included, since removing or adding references does not have an effect on other references.

In the Author-Year system, references are cited in the text by author's surname and year, e.g.

"First year students prefer Arts courses over Science courses (Smith 1994)",

or

"Smith (1994) found that first year students prefer Arts courses over Science courses."

Note that extra punctuation (e.g. "Smith, 1994") may be added, but must be consistent throughout.

When citing authors in the text, all names are included if there are one or two authors (e.g. Smith and Jones 1994). For three or more authors, list as Author *et al.* and year (e.g. Smith *et al.* 1994). Because *et al.* is Latin, it should be italicised or underlined, but current convention is to place it in standard type. Whichever you choose, you must be consistent. Note the period after "al".

Remember that **all** the authors names must be given when you list the references in the Literature Cited. You may not use the abbreviation "et al." cannot be used in the Literature Cited section.

Appendix

If an appendix is needed, it should follow the Literature Cited. The section includes supplementary illustrative material, original data and statistical tables too lengthy for inclusion in the text, or material not immediately necessary for an understanding of the subject.

3. FINAL CONSIDERATIONS

In general, the thesis should show that the student has mastery of the field in which (s)he presents himself/herself, and is fully conversant with the relevant literature. The thesis style should follow a standard style manual, be lucid and well written, and be free of typographical and other errors.

Individual hard copies of the submitted thesis are required for each member of the advisory committee for evaluation at the end of term. Do not submit an electronic copy to the advisory committee, unless a committee member has specifically requested one.

Oral Presentation and Defense

Students will give an oral presentation to the department and invited guests (including parents and friends). The presentation should be about 15 minutes, leaving about 5 minutes for questions, and should be targeted at an audience of peers, that is other 4th year Biology students. All faculty members in the Biology department that are present will submit a grade for the oral presentation, and the students and faculty will be able to vote on the “best presentation” of the day.

Students will then meet with their supervisory committee in private for the defence, a chance for the committee to ask each student specific questions about the study and the study findings. This usually takes the form of each committee member asking 2 or 3 questions, with the student being able to refer to their thesis to answer them.

Following the oral examination of the student, the supervisor and committee members will detail any necessary revisions that are required before final acceptance of the thesis by the committee. The final thesis must also be accepted by the Honours Co-ordinator before a mark will be submitted.

The student will submit the corrected copy, along with a memo from the supervisor attesting that the corrections have been made, to the Honours Co-ordinator, who will check the thesis for formatting. Further corrections may be required before final acceptance.

Once all the corrections have been made, the revised thesis will be handed in to the department for binding.

– a minimum of 2 copies are required; one for the Biology Department, and one for the Robertson Library. The original copy goes to the library.

– if students and supervisors wish additional bound copies, arrangements must be made in advance to cover the cost of these copies.

– The biology department will cover the costs of duplicating and binding a copy for the student, but if additional copies are desired, payment for the copies and the binding must be pre-arranged.

– note: the biology department will organize the duplicating of the thesis if:

1. an active grant number (or other means of payment, in advance) is passed to the department to cover the duplicating
2. additional copies of any colour illustrations are provided at the time of submitting the final copy

A note on costs covered by the department:

The department does not cover costs of photocopying colour or black and white copies of the thesis. A small fund is available to help offset some of the costs of printing or other honours expenses, but it must be requested by the supervisor, supported by receipts, and be submitted to the department before mid-April of the thesis year.