

THESIS WRITING GUIDE

for Pure, Applied

and

Life Sciences

This document summarizes the main writing requirements for theses and dissertations submitted at INRS. It points readers to writing aids and reviews the basic writing conventions for quantities, units, symbols, numbers, abbreviations, and so on.

The guide is provided with an [MS Word model](#) containing the required styles, a LaTeX template and a bibliographic style for *EndNote* software (*INRS Sciences et technologies*).

CHAPTER 1

THE CONTENTS OF A TRADITIONAL THESIS OR DISSERTATION

At INRS, theses and dissertations must include the following components:

Preliminary pages

The preliminary pages comprise all the information needed to succinctly describe the contents of a work.

ORDER OF PRELIMINARY PAGES		
Mandatory	Optional	If the document is in English
Title page		
	Dedication	
	Acknowledgements	
	Foreword	
Abstract		
Résumé (french abstract)		
		Synopsis in french
Table of contents		
List of figures		
List of tables		
List of acronyms and abbreviations		

Title page

The title page includes the usual basic information: author and title, the nature and purpose of the document, place of writing, intellectual property statement, month and year of submission, and evaluation committee members.

Since works will be distributed through various tools, titles should be limited to 175 characters, including spaces and punctuation.

The programs and degrees INRS offers at the Eau Terre Environnement and INRS-Institut Armand Frappier centres are listed below and must appear in the following forms on the title page:

Program	Degree
Master's in Water Sciences	Master of Science, M.Sc.
Doctorate in Water Sciences	Doctor of Philosophy, Ph.D.
Master's in Earth Sciences Jointly offered by INRS and Université Laval	Master of Science, M.Sc.
Doctorate in Earth Sciences Jointly offered by INRS and Université Laval	Doctor of Philosophy, Ph.D.
Master's in Experimental Health Sciences	Master of Science, M.Sc.
Master's in Applied Microbiology	Master of Science, M.Sc.
Master's in Virology and Immunology	Master of Science, M.Sc.
Doctorate in Virology and Immunology	Doctor of Philosophy, Ph.D.
Doctorate in Biology	Doctor of Philosophy, Ph.D.

Abstracts

An abstract, or summary, must be included in French and English, regardless of the language in which the document is written.

The abstract should **never** include references, chemical equations, or complex mathematical formulas.

The abstract is single spaced and should not exceed 150 to 200 words for a master's thesis, or 350 to 400 words for a doctoral dissertation. It should be followed by a series of keywords (maximum 10).

The French abstract is a translation of the English abstract and is subject to the same conditions (e.g., length, keywords).

Synopsis (if required)

A *synopsis is required* when a thesis or dissertation is written in English. It should be about twenty (20) pages in length and is in no way a replacement for the French abstract. This section includes the main points discussed in the document and explains the working hypotheses, research objectives, methodology, and results (i.e., the normal parts of a thesis) **in much more detail than the abstract does**. Unlike the abstract, the synopsis can **refer to tables and figures** in the main text.

Table of contents

A maximum of three heading levels are permitted. The MS Word model can be used to generate a table of contents automatically.

Lists of figures and tables

Each list is separate and independent. The MS Word model can be used to generate a list automatically.

Other lists

Other lists may be added as needed (e.g., list of abbreviations, acronyms, symbols, appendices).

Bibliography

Entries must be complete, consistent, and clear.

Appendices

The appendices are placed after the bibliography. If there are more than one, they appear in the order in which they are mentioned in the text, numbered as Appendix I, Appendix II, Appendix III, and so on, in uppercase roman numerals, followed by their proper titles.

CHAPTER 2

FORMAT

For the entire document	
Margins	Uniform and 25 mm for odd and even pages, including pages with tables or figures
Chapters	Must always begin on an odd page (i.e., on the right in an open paper document)
Paragraphs	Must always begin on the first line of a page and should not end on the first line of a page
Font	Must be clear and legible (e.g., Arial, Calibri, Tahoma, or Verdana). The Word model uses Arial. The font selected at the beginning must be used throughout the document

Pagination is as follows:	
Position of page numbers	Centred at the bottom of the page in 10 point font and without any other ornamentation in either case
Preliminary pages	In lowercase roman numerals, starting from the title page
Title page	Counted but the number is omitted
Introduction and subsequent pages	In Arabic numerals, starting with 1 up to the end of the document, including the appendix pages, which continue consecutively from the body pages

Heading and paragraph hierarchy

Headings and **subheadings** are organized into a hierarchy using font sizes and styles. Numbering should not exceed three numerical levels. Level 1 headings are left-aligned, except on preliminary pages, where they are centred. All headings and subheadings are single-spaced without a period at the end. The same rules apply in appendices.

The initial font (e.g., Arial) selected must also be consistent in headings. The Word model uses Arial.

Heading CHAPTER #	Arial 16 pt bold, all upper case	Line break: Shift + Enter
Subheading	Arial 14 pt bold, upper case 1st letter	Single spacing Spacing before: 18 pt Spacing after: 24 pt
Sub-subheading	Arial 12 pt bold, indented 1.25 cm	Single spacing Spacing before: 18 pt Spacing after: 24 pt

Avoid placing a level 2 or 3 subheading immediately under a level 1 or 2 heading.

Paragraphs	Justified margins Line spacing: 1.5 Spacing before and after: 6 point Text: 11 point normal
Abstracts, title page, table of contents, list of figures, list of tables, and others	Single spacing Text: 11 point normal
Table and figure captions	Single spacing Text: 10 point bold (see chapter on how to format tables, figures, and equations)
Footnotes	Justified margins Single spacing First line indented by -0.5 cm, with tab at 0.5 cm Spacing after: 6 point Text: 9 point normal
Long citations of more than three lines are set off as separate paragraphs. *Short quotations are inserted in regular paragraphs between quotation marks (“[...]”).	Justified margins Single spacing Indented 1 cm from the left and right margins Spacing before and after: 6 point Text: 11 point normal

CHAPTER 3

TABLES, FIGURES, AND EQUATIONS

Tables

The title will be as listed in the list of tables, while the caption provides an additional explanation. It must not be longer than 60 characters. Descriptions, explanations, and referrals to works cited can be included in the caption but never in the title. Anything that is not part of the title (e.g., attribution) must be inserted in a note below the table.

Table 4.1: Table title, placed above.

Category heading	Column 1^a heading	Column 2 heading	Column 3 heading
Heading line 1			
Subheading line 1	12	12	12
Subheading line 2	12	12	12
Heading line 2			
Subheading line 1	12	12	12
Subheading line 2	12	12	12
Heading line 3			
Subheading line 1	12	12	12
Subheading line 2	12	12	12

A caption may follow the table so that readers can understand the contents of the table without having to consult the text.

- The **main title** is preceded by an Arabic numeral in sequential order based on order of appearance in the chapter (e.g., Table 4.2)
 - o Bold, upright, 10 point font
 - o Justified, single spacing
 - o 12 point spacing before and after
 - o Maximum length of 60 characters recommended
- **Line and column headings** (and potentially subheadings as well) are left-aligned for line headings and centred for column headings
- Whole **numbers** are centered in columns; others are aligned on the decimal point using a decimal tab
- **Captions and annotations** appear underneath the table:
 - o Note indicators: lowercase superscript letters, in alphabetical order from top to bottom and left to right
 - o Format: Text is single spaced and the same size font as in the table. The annotations run the entire width of the table

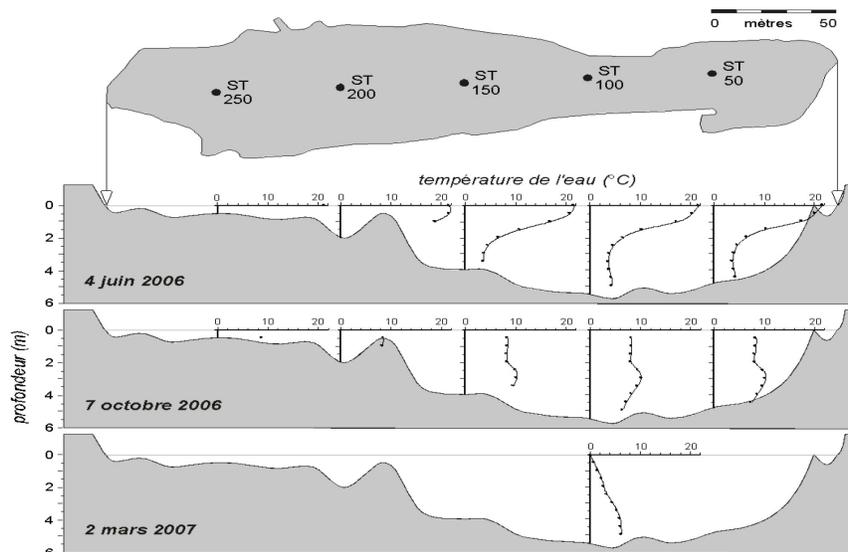
- The **orientation** of the table must follow that of the text. It must be centred
- For **large tables**:
 - o The size of the characters and numerals may be reduced one to three points
 - o The table may be split into sections over a number of pages
 - o The table may be displayed in landscape orientation with a 90° counter-clockwise (not clockwise) rotation
 - o The table may be shown on an odd-numbered page on an 11X17" sheet.
 - o Oversized tables are displayed in an appendix

When content is not completely new, it is advisable to refer to the original source (e.g., reproduction authorized by..., Adapted from...).

Figures

A figure (e.g., diagram, sketch, map, or photograph) appears after the first mention and is located in the first place where it can be completely inserted, between two paragraphs.

Figure 4.1: Vertical temperature profiles



Three times of year at five stations in a longitudinal cut across the Manitoou pit

- The **main title** is preceded by a decimal number in Arabic numerals in order of its appearance in the chapter (e.g., Figure 4.1)
 - o Bold, upright 10 point font
 - o Justified, single spacing

- o 12 point spacing before and after
- o Maximum length of 60 characters recommended
- The **orientation** of the figure must follow that of the text; it must be centred horizontally in the text area and fall within the side margins; Figures to be shown in landscape orientation must be turned 90° counter-clockwise, not clockwise
- **Large figures** can be shown on odd-numbered pages on an 11X17" sheet
- Oversized figures are displayed in an appendix
- It is essential that the format of all figures inserted in the document be **consistent** with regard to boxes, grids, symbols, lines, headings, and so on

Complete or substantial reproduction of a figure requires written permission from the copyright holder. When the content is not completely new, it is advisable to refer to the original source (e.g., Reproduced with permission from..., Adapted from...).

Equations

All equations must be numbered sequentially in Arabic numerals. These numbers must appear along the document's right margin in parentheses. Mathematical and chemical equations follow the same numbering.

Equation terms and symbols, if they are not explained in the text, must be given in a caption under the equation. For example:

$$A = A_0 e^{-\lambda t} \quad (1)$$

where $t = \frac{1}{\lambda} \ln \left(\frac{A_0}{A} \right)$ (2)

where A is the activity of the radioactive isotope at depth ($z = x$ cm) in sediment
 A_0 is the activity of the radioactive isotope on the surface ($z = 0$)
 λ is the radioactive decay constant for the isotope
 t is the age (year) of the sediment at depth ($z = x$ cm)

CHAPTER 4

ARTICLE-BASED THESES AND DISSERTATIONS

The format is subject to the same guidelines as those for conventional theses and dissertations, with the following exceptions.

Article-based theses or dissertations submitted to INRS must include the following components:

PRELIMINARY PAGES, INCLUDING THE FOLLOWING SECTIONS		
In all cases	In the document is in English	Optional
Title page		
Résumé (French)		
Abstract		
	Synopsis in french (if document is in English)	
		Foreword
		Acknowledgements
Table of contents		
List of figures		
List of tables		
List of acronyms and abbreviations		

- A **first part** summarizing the approach and results, and justifying and linking the articles
- A **second part** consisting of the articles
- Additional pages, including:
 - References
 - Appendices

The **first part** should be about 20 pages for a master's thesis and about 50 pages for a doctoral dissertation.

Each section and each article must be treated as a chapter.

Articles are introduced by a page giving the following information:

- The article's title, which serves as a chapter title. The French translation is added if the thesis or dissertation is written in English
- The names of the authors and their professional affiliations
- The title of the journal or work to which the article has been submitted or in which it has been accepted or published, along with the date of submission, acceptance, or publication

- **A few paragraphs explaining the nature of the student's and each co-author's contributions to each article**
- A summary in French (if the article is in English and the thesis or dissertation is in French) and abstract in English

Format

Each article must appear in manuscript form, with the **exact same text as the one submitted or pending submission for publication**, but in the same format as the thesis or dissertation:

- Pagination follows that of the entire thesis or dissertation
- Tables and figures are inserted in the position they would occupy in a conventional version rather than at the end, so that reading is more fluid
- Bibliographic references are inserted at the end of each chapter (summary, articles, and so on) in a manner that is consistent from the beginning to the end of the document. In this case, formatting for each chapter corresponds to the formatting requirements of the journal in question

For legal reasons, **the publisher's definitive PDF version (reprint) of a published article cannot be inserted** for any reason whatsoever.

Note: Articles that have been accepted or published by publishers that do not authorize their distribution online will be removed when the thesis is entered in the institutional repository (Espace INRS) and replaced by a simple bibliographic reference, including a DOI link to the article on the publisher's site.

CHAPTER 5

BIBLIOGRAPHIC STYLE

INRS has a specific bibliographic format for the pure and applied sciences as well as a template for Endnote. While this format is not mandatory, consistency must be maintained from the beginning to the end.

With the exception of article-based theses under certain conditions described earlier, only author-date references are acceptable in a thesis or dissertation.

In-text citations

In-text citations include the **last name of the first two authors** and the **year of publication**.

- **Documents by a single author**

Examples

Adam Smith's mechanistic model is not exempt from criticism, particularly in relation to the role of interest (Godbout, 2007).

After presenting Adam Smith's mechanistic model and its contributions and deficiencies, Godbout (2007) provides an in-depth critical analysis of all interest-based models.

Adam Smith's mechanistic model is not exempt from criticism, particularly in relation to the role of interest (Godbout, 2007, cited in Jones, 2010).

- **Documents written by two or more authors**

Only the first two authors are named followed by *et al.*:

(Ouarda et al., 2008)

(Ouarda & Smith, 2008)

- **References to multiple documents published by the same author(s) in the same year**

Each title is differentiated by a lowercase letter, in alphabetical order. The abridged references take the following form:

(Corriveau, 2007a; Corriveau 2007c)

(Corriveau *et al.*, 2007c)

- **A number of references in the same place in the text**

(Apparicio, 2006; Tétreault, 2010)

- **Documents with no publication date**

The date is replaced with “n.d.” (no date):

(Lévesque, n.d.)

If the date can be deduced, it is given between brackets:

(Helly, [2006])

Note: Listing personal communication (e.g., letters, emails) in a bibliography is not recommended because these documents cannot be consulted by readers.

References and the bibliography

References must appear in the following order:

1. Alphabetical order by the first author’s last name
 - Publication date, in decreasing order
 - Alphabetical order by title (ignoring the initial article)

If the list contains more than one work by the same author, use the same form of the name, preferably the most complete, if its appearance varies from one document to another.

A comma separates the names of the first and second authors. An ampersand “&” separates the names of the last two authors.

Franco A, Costoya MA & Roca E (2007) Estimating risk during showering exposure to VOCs of workers in a metal-degreasing facility. *J Toxicol Environ Health A* 70(7): 627-637.

Todaro JL (2008) The truth is out there: Is that my garbage can? *Lib. Admin. Manage.* 22(1) : 47-48

Institut national de la recherche scientifique (2005). *Colloque international jeunes et dynamiques territoriales*. INRS Observatoire Jeunes et société, Quebec City. DVD, 11 h 30 min.

US EPA (2013) *Projected Emission Reductions Overstated and Buy American Requirements Not Met Under EPA Award to the Tennessee Department of Transportation, Report No. 13-R-0321*. US Environmental Protection Agency, Washington, DC. 82 p

Use “Anonymous” when the author is unknown.

Anonymous (2009) California Water War. *The Economist* 393(8652):34-36.

Since there is not one specific author of a collective work, the editor is named, followed by “Ed.” (or “Eds.” if there are more than one).

Soutter M, Mermoud A & Musy A (Eds.) (2007) *Ingénierie des eaux et du sol : Processus et aménagements*. Presses polytechniques et universitaires romandes, Lausanne, 294 p.

In the case of chapters with one or more authors, the names of the book editors, followed by “Eds.,” are given after the title of the book.

Bertrand-Krajewski JL, Fletcher TD & Mitchell VG (2007) Spatial and temporal scale considerations. Fletcher TD & Deletic A (Eds.) *Data requirements for integrated urban water management*, (Urban Water Series - UNESCO-IHP: 1), CRC Press, Boca Raton, pp 45-64.

Only the first word of the title of an article or a book chapter takes an initial uppercase letter. However, for titles in English, all “major” words (e.g., nouns, adjectives, verbs) in the name of a journal or the title of a book are written with an uppercase letter.

Chiu WA, Caldwell JC, Keshava N & Scott CS (2006) Key scientific issues in the health risk assessment of trichloroethylene. *Environ. Health Perspect.* 114(9):1445-1449.

The issue number or description are abridged in the language of the document (e.g., 2nd ed.) and placed after the title.

Esping-Andersen G (2007) *Les trois mondes de l'État-providence : essai sur le capitalisme moderne*. 2^e éd. Presses universitaires de France, Paris, 310 p.

The place of publication is the location of the publisher’s main offices.

Ouellette FR, Joyal R & Hurtubise R (Eds.) (2005) *Familles en mouvance : Quels enjeux éthiques?* Presses de l'Université Laval, Québec. 399 p.

Website URLs can quickly become invalid. As a result, it is essential that URLs be followed by the site access date.

Université Laval (2013) *Vers un campus carboneutre*. Université Laval, Québec <http://www2.ulaval.ca/developpement-durable/vers-un-campus-carboneutre.html> (Accessed March 26, 2014).

Lengthy URLs can be replaced by addresses simplified using online shortening tools (e.g., tinyurl.com, bit.ly, goo.gl).

Université Laval (2013) *Vers un campus carboneutre*. Université Laval, Québec. <http://goo.gl/FuFQJ> (Accessed March 26, 2014)

Examples of different types of documents

- **Books (monographs)**

Soutter M, Mermoud A, & Musy A (2007) *Ingénierie des eaux et du sol : processus et aménagements*. Presses polytechniques et universitaires romandes, Lausanne. 294 p.

- **Collective works**

Ouellette FR, Joyal R & Hurtubise R (Eds.) (2005) *Familles en mouvance : Quels enjeux éthiques?* Presses de l'Université Laval, Québec. 399 p.

- **Book chapters**

Bertrand-Krajewski JL, Fletcher TD & Mitchell VG (2007) Spatial and temporal scale considerations. *Data requirements for integrated urban water management*, (Urban Water Series - UNESCO-IHP: 1), Fletcher TD & Deletic A (Eds.) CRC Press, Boca Raton. p 45–64.

- **Conference papers**

Zarifi K, Abuthinien M, Ghrayeb A, & Affes S (2009) Relay selection schemes for uniformly distributed wireless sensor networks. *IEEE Wireless Communications and Networking Conference, WCNC*, (Budapest, April 5–8, 2009), Article #4917942.

- **Periodical articles**

Ben Rebah F, Prevost D, Yezza A, & Tyagi RD (2007) Agro-industrial waste materials and wastewater

sludge for rhizobial inoculant production: A review. *Bioresour. Technol.* 98(18):3535-3546.

- **Theses and dissertations**

Aubert M (2009) *La datation par les séries de l'uranium en archéologie : Nouvelles applications à la datation de l'art rupestre et des fossiles humains*. PhD dissertation in Geoscience (Université du Québec. Institut national de la recherche scientifique, Québec). 170 p.

- **Patents**

Cisneros I (2009) *Method for extracting oil from plant material*. Patent 7,507,869 (USA) Issued March 24, 2009.

- **Official documents and reports**

Official documents are issued by a government or an international organization without a clearly established individual author. As a result, the author's name is replaced by the level of government in charge of the document, followed by the name of the ministry or administrative division, or by the name of the organization and the administrative division.

Endnote: Book Model

Montréal. Service de l'environnement (2003) *Plan d'action vert pour le Vieux-Montréal*. Ville de Montréal, Montréal, 64 p.

United Nations. United Nations Environment Programme (2009) *Mongolia Assessment Report on Climate Change 2009*. United Nations, New York. 228 p :
http://www.unep.org/pdf/MARCC2009_BOOK.pdf (Visited May 28, 2010)

- **Newspaper articles**

Lemieux LG (2004) La Société du 400^e, l'INRS et la CCNQ publieront un livre sur Québec et sa région. *Le Soleil* (Québec), La Capitale et ses régions, January 8, 2004, p. A10

- **Web pages and other online resources (e.g., data set)**

If the publication date is not clearly indicated, use 1) the copyright date OR 2) the date of the last update, OR as a last resort, 3) the page access date.

If the title of the web page is not well defined, use what most clearly resembles the title in the body of the page.

EndNote: Web page Model

Environnement Canada (2007) *Trichloroethylene - Fiche toxicologique*. Environnement Canada,

Département des eaux intérieures et des écosystèmes aquatiques, Ottawa),
<http://www.ec.gc.ca/dee/toxihelp/26374.php> (Accessed November 13, 2008)

US NOAA (2014) *NOAA predicts near-normal or below-normal 2014 Atlantic hurricane season*. National Oceanic and Atmospheric Administration, Washington, DC. <http://goo.gl/tPrQQc> (Accessed July 2, 2014)

- **Maps and aerial photos**

Mention the scale and, if available, the series number.

EndNote: Map Model

Wanless RK (1971) *Isotopic Age Map of Canada*. Natural Resources Canada / Ressources naturelles Canada, Ottawa, (1:5000000)

- **Audiovisual material**

Mention the support type (e.g., DVD).

EndNote : Audiovisual material Model

Monderie R & Desjardins R (1999) *L'Erreur boréale*. National Film Board of Canada, Montreal., DVD 55 min.