



**Master's Thesis
and
Project Documentation Guide**

Oregon Institute of Technology

2020

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I. Masters Projects

The format and guidelines for Projects are at the discretion of the Masters Program.

II. Introductory Information

This handbook is limited to material regarding your thesis/project documentation. For information regarding graduate programs, please consult OIT's *General Catalogue*.

Language

You must write the document in English and adhere to accepted standards of usage in matters of grammar, punctuation, and mechanics. If you are a non-native speaker of English, please seek assistance as appropriate.

Length

There is no specific requirement for the number of pages in your document. You should work closely with your graduate advisor to plan, outline, and write the text.

Final Copies

Submit a .pdf copy of your final document to the thesis editor in the library. This will be published electronically and freely accessible to the public unless you make other arrangements in writing. Forms for permission to publish electronically and request to restrict access are available in the *Graduate Handbook*. File completed forms with the thesis editor.

III.Document Format

This section describes formatting requirements for your thesis or project documentation. It is essential that you follow them meticulously. If you have questions about formatting, consult your graduate advisor, a member of your Graduate Committee, or the thesis editor. Do not use a previously accepted OIT document as an example because guidelines change.

Word Processing

Word process all aspects of your document, including graphics within the text. Minimum acceptable resolution for text and graphics is 300 x 300 dpi.

Arrangement of Contents

Below is an outline of the required organization of document elements.

Preliminary Pages

Preliminary pages, also called front matter, include the following, in this order:

- Title page
- Copyright page
- Final approval form
- Dedication (optional)
- Acknowledgments (optional)
- Abstract
- Table of contents
- List of figures/tables/illustrations
- List of abbreviations (optional)
- List of symbols (optional)
- Glossary (optional)

Body

Ending Elements

- References
- Appendices

Format Specifications

This section describes required typography, margins, pagination, and other details involved in formatting. It is essential that you follow these specifications; doing so will ensure that your document adheres to graduate program requirements and is a professionally acceptable representation of both you and Oregon Institute of Technology.

Margins

Use 1" margins all around for your document; note that graphical elements must conform to typing margins.

Spacing

Double-space your text throughout but note the following exceptions:

- Lengthy tables (single-space as necessary)
- Lengthy quotes (over 100 words; inset 1" from the side margins and single-space)
- Figure captions or section headings longer than one line
- References (single-space entries; double-space between entries)
- Simple bulleted lists (such as this one)
- Some preliminary pages (see Section III)

Start each new section on a new page. Figures 1 and 2 on page 4 show basic page layout. Dotted lines indicate margins.

Typeface

- Use Times New Roman, 12-point, for body text. Use Times New Roman, 11-point italics, for figure captions and table headings.
- Use Times New Roman, 8-12 point, for labeling internal information in a graphical element. If you need to reduce the figure, take care to ensure that the reduction type size is at least 8-point.

Headings

Longer technical documents, such as this manual, include headings as an aid for both reader and writer. Use the following fonts and sizes for your thesis headings (see Figure 3 on page 5 for an example of headings in text):

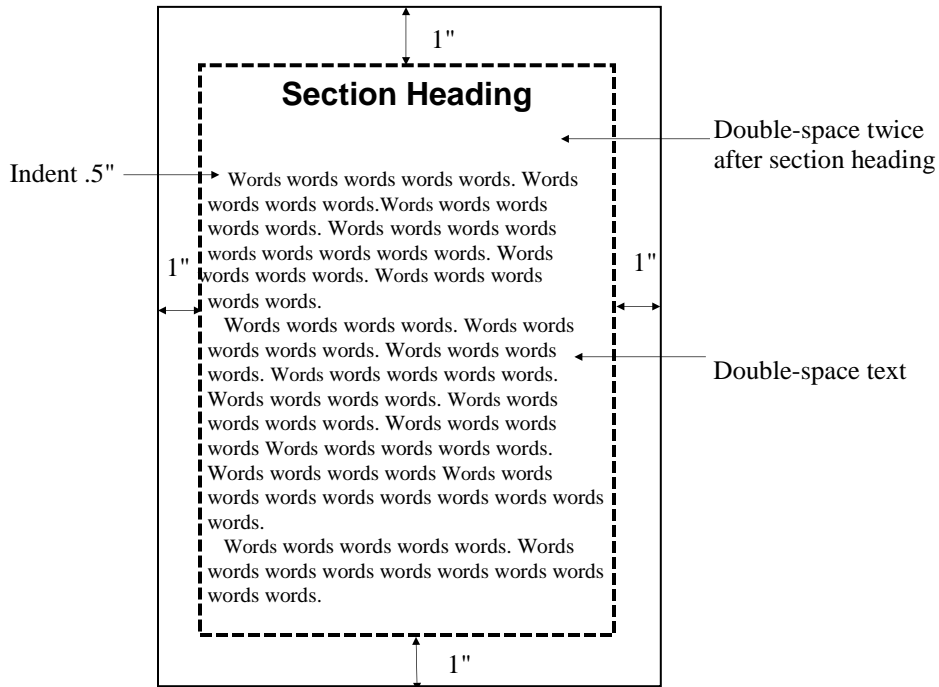


Figure 1. Basic page, with section heading

- Section headings: 16-point Arial bold, centered, on a line by itself; for aesthetics, double-space twice after a section head before the first line of text; capitalize the first letters of the major words in your title but not prepositions or conjunctions
- First order headings within a section: 14-point Times New Roman bold, centered, on a line by itself; capitalize the first letters of the major words

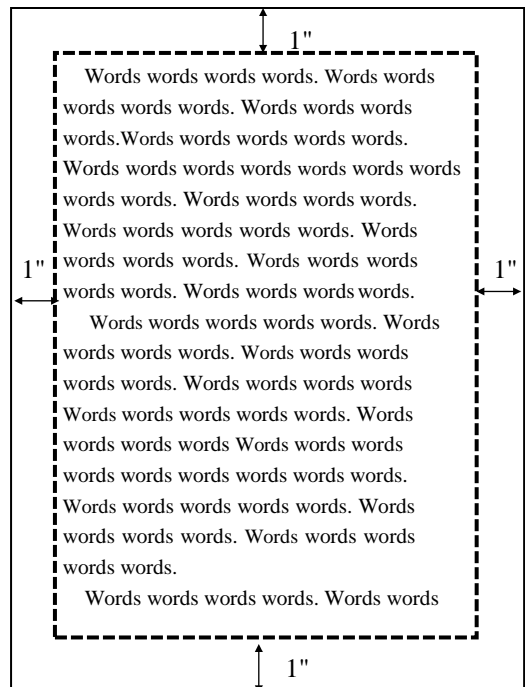


Figure 2. Page layout without section heading

- Second order headings within a section: 12-point Times New Roman bold italics, left justified, on a line by itself; capitalize the first letters of the major words
- Third order headings within a section: 12-point Times New Roman italics, left justified, on a line by itself; capitalize the first letters of the major words
- Fourth order headings within a section: 12-point Times New Roman italics, starting a paragraph; only capitalize the first letter of the first word, unless the heading includes a proper noun, and put a period after the heading

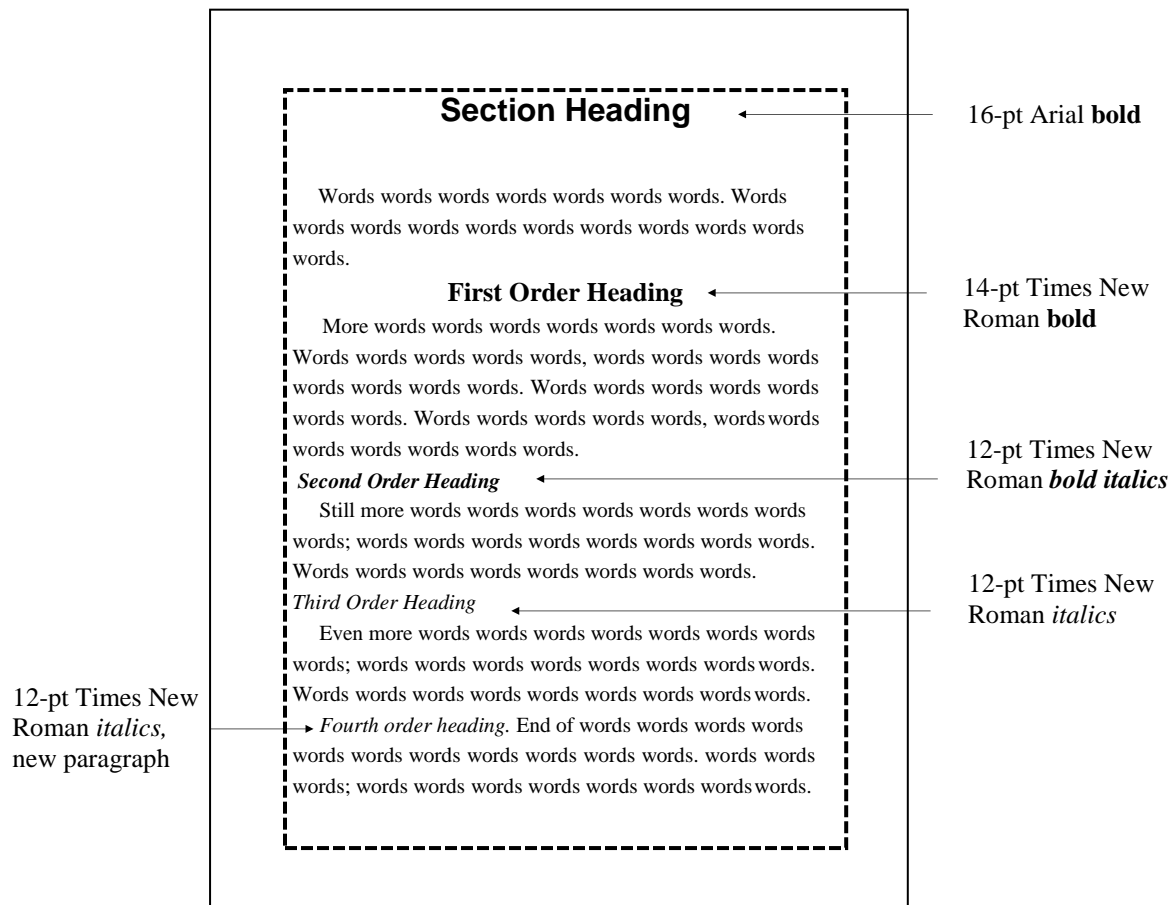


Figure 3. Page example, with headings

Note that headings come in pairs, similar to an outline. If you have outlined your thesis, those divisions will become your headings. Table 1 on page 6 shows the relationship between an outline and text headings.

Table 1. Relationship between outline format and text headings

Outline Format (Traditional)	Heading Format
<i>Title</i>	<i>Section heading</i>
I. Major division A. Subheading B. Subheading 1. Further division 2. Further division a. Final division b. Final division II. Major division etc.	First order heading Second order heading Second order heading Third order heading Third order heading Fourth order heading Fourth order heading First order heading etc.

Avoid “empty” heads, headings with no text below them, and “hanging” heads, those at the bottom of a page with no text beneath. Include at least two lines of text beneath a heading at the bottom of the page. If this is not possible, simply move the heading to the top of the next page.

Ensure that you have enough information in a section to warrant a heading, as too many headings clutter the page and chop up the text unnecessarily. While this guide includes headings for very short paragraphs as a method for easy reference, you should avoid this technique in your document.

Type Style

Limit your use of type styles to conventional usage: use italics for titles of journals, newspapers, and books, and limit boldface to headings. Use body text style (12-point Times New Roman for quotations).

Justification

Left justify text, preliminary pages, and ending elements. Right justify page numbers listed in the table of contents and list of figures/tables/illustrations.

Pagination

Paginate bottom center, at the bottom margin. For preliminary pages, use lower-cased Roman numerals; count, but do not number, pages preceding the Table of Contents.

Start Arabic pagination with the first page of your introduction and continue with this pagination through the references.

If your document has several appendices, paginate as A-1, A-2; B-1, B-2, etc. If it has only one appendix, continue with Arabic pagination.

Equations and Formulae

Treat equations and formulae as text blocks. Assign each equation a number, and caption as “Equation X,” italicized and flush to the right margin:

$$E=MC^2 \qquad \text{Equation 1}$$

$$t_c = \frac{1}{k-r} \ln \left[\frac{k_r \left(1 - \frac{D_a k_r - k_d}{L a k^d} \right)}{k^d} \right] \qquad \text{Equation 2}$$

Do not include equations or formulae in the List of Figures/Tables/Illustrations. If your equations or formulae exceed one page, include them in an appendix

Widows and Orphans

A widow is the final line or word of a paragraph by itself at the top of a page; an orphan is the opening line of a paragraph by itself at the bottom of a page. Both waste space and are aesthetically displeasing. Rephrase the sentence or adjust spacing to avoid these.

IV. Preliminary Pages

In addition to the general formatting guidelines presented in Section II, you must follow the specifications below for each individual section of your document.

Preliminary pages precede the text of your document. All are required, unless noted as “optional.” Order required pages as listed below. Insert optional pages as indicated in the list on page 2 of this guide. Examples are included for most pages. Treat the headings for all preliminary pages as section headings.

Required Pages

All of these pages are similar in format, unless specifically noted. Type the title in 16-point bold Arial, centered between the side margins, and double-space twice between the title and the first entry on the page. Use body text for entries; some entries require bold type, as indicated in the examples.

Title Page

Type the title in the required format, as shown in Figure 4 on page 9. If your title requires more than one line, use the inverted pyramid style (first line longer than the second). Use word substitutes for formulae, symbols, superscripts, Greek letters, etc.

Below the title, at the vertical and horizontal center of the margins, correctly spaced, center the following lines using body text:

- Line 1: A Thesis *OR* Project Documentation
- Line 2: Presented to the Faculty
- Line 3: of Oregon Institute of Technology
- Line 4: in Partial Fulfillment of the Requirements for the Degree
- Line 5: of Master of Science

Center the following three lines within the margins, 1.5" from the bottom of the page:

- Line 1: by
- Line 2: name under which you are registered in the Registrar’s Office
- Line 3: month and year of degree conferral, not the date the document is submitted; no comma between month and year

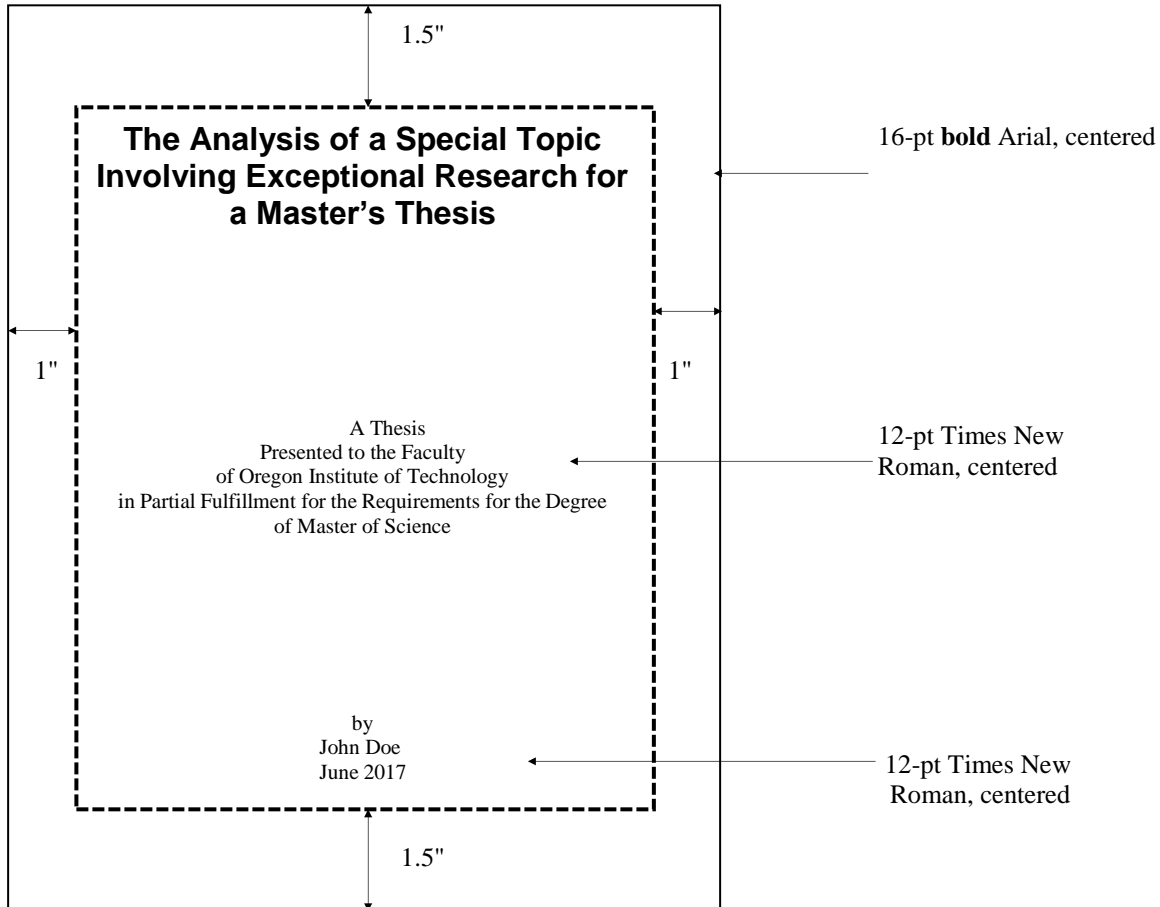


Figure 4. Example of title page

Copyright Page

Copyright is automatic for any document. The “all rights reserved” statement protects your document from being reproduced in those countries that do not adhere to international copyright regulations.

On this page, include the following information, centered:

© 20-- student's registered name

All Rights Reserved

Figure 5 on page 10 shows an example copyright page. Note there is no page heading. The date that follows the copyright symbol is the year of conferral of your degree (the same year as on the title page). Your name follows the date with one space between. Use body text style.

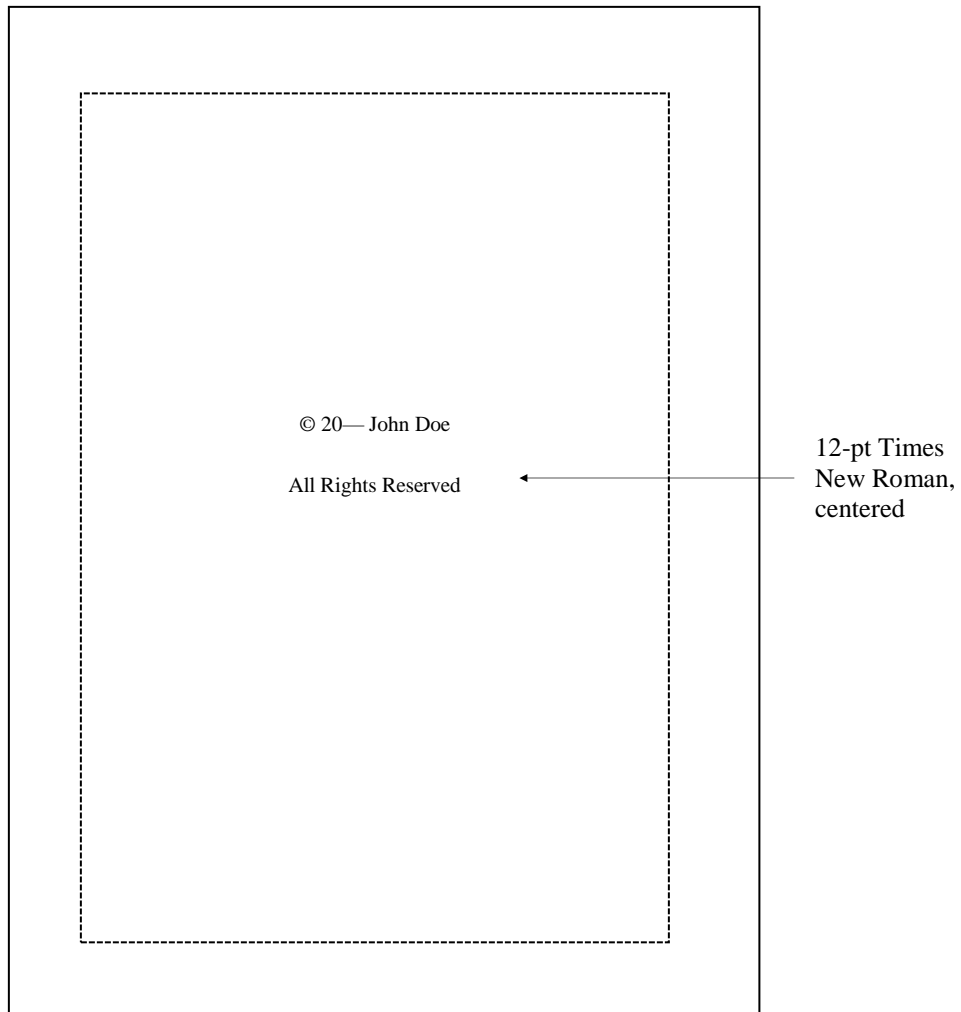


Figure 5. Example of copyright page

Final Approval Form

Obtain this page from the *Graduate Handbook*, collect the necessary signatures, and include it in the final copy of your document.

Abstract

The abstract is a condensed summary of your thesis: state the problem, describe the methods and procedures used, and give the main results or conclusions. Limit your abstract to one double-spaced page, and write it only after completing your thesis. Figure 6 shows an example abstract page.

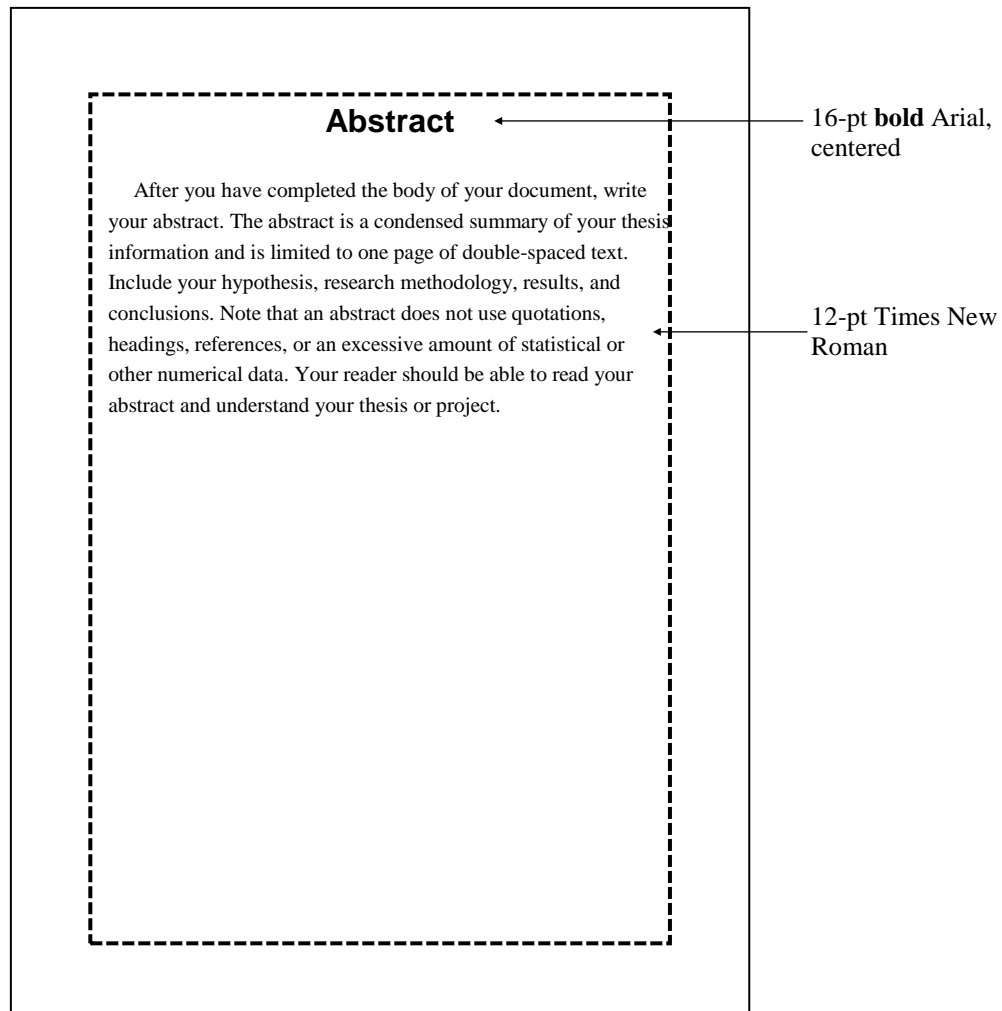


Figure 6. Example of abstract page

Table of Contents

The table of contents lists the arrangement of your document, including any preliminary pages that follow it. You may single-space this page. It is essential that page numbers are accurate, as this page functions as a locator for the reader. If you use an automatic table of contents function, double-check for accuracy and formatting.

On the left side of the page, align section and first order headings; wording should be identical to text headings. On the right side, include the heading's initial page number. Join these with dots, and right justify page numbers. Figure 7 is an example of a table of contents.

Table of Contents	
Section Heading	1
First Order Heading.....	1
First Order Heading.....	7
Second Order Heading.....	9
Second Order Heading.....	11
Section Heading	14
First Order Heading.....	14
Second Order Heading.....	16
Second Order Heading.....	19
First Order Heading.....	23
Appendices	
A: Title.....	A-1
B: Title.....	B-1

Figure 7. Example of table of contents page

List of Figures/Tables/Illustrations

This page is similar to the table of contents: it lists all of the graphical elements in your document. If you have only figures, title this page List of Figures. If you have only tables, it is a List of Tables. If you have both figures and tables, it is called a List of Illustrations. You may single-space this page. Include illustrations located in appendices.

Lay out this page like your table of contents: list your figure/table numbers and graphic captions, exactly as they appear in the text, and page numbers, joined by dots. Right justify page numbers. See Figures 8-10 for examples of each.

List of Figures	
1. Figure caption here	3
2. Figure caption here	6
3. Figure caption here	7
Note: this list includes figures in appendices	

Figure 8. Example of list of figures

List of Tables	
1. Table caption here.....	3
2. Table caption here.....	5
3. Table caption here.....	8
4. Table caption here.....	15
5. Table caption here.....	22
Note: this list includes tables in appendices	

Figure 9. Example of list of tables

Optional Pages

While none of the following pages is required, if you have used specialized vocabulary, symbols, or abbreviations in your thesis, consider including the appropriate page as a courtesy to your reader. Insert pages as indicated on page 2 of this guide.

Lay out all of these pages like the required pages: use 16-pt bold Arial for page headings and body text style for entries.

Dedication

This page allows you to dedicate your document to a special person(s). Center the text on the page within the margins, and do not include a heading. The text on this page does not need to be in English. Figure 11, on page 15, is an example of a dedication page.

Acknowledgments

This page allows you to recognize persons or entities who gave you special assistance with your document.

For example, it would be politic to express appreciation to your graduate advisor and/or Graduate Committee for their assistance.

If you have received funding from a grant for your thesis research, it is essential to acknowledge that assistance. Some agencies have special formats for doing so. Check with your funding source for appropriate acknowledgment format.

First person is permissible in an acknowledgment. See Figure 12, on page 15, for an example of an acknowledgments page.

List of Illustrations	
Figures	
1. Figure caption here.....	3
2. Figure caption here.....	5
3. Figure caption here.....	8
4. Figure caption here.....	15
5. Figure caption here.....	22
Tables	
1. Table caption here.....	2
2. Table caption here.....	4
3. Table caption here.....	7
4. Table caption here.....	13
5. Table caption here.....	21
Note: this list includes figures and tables in appendices	

Figure 10. Example of list of illustrations

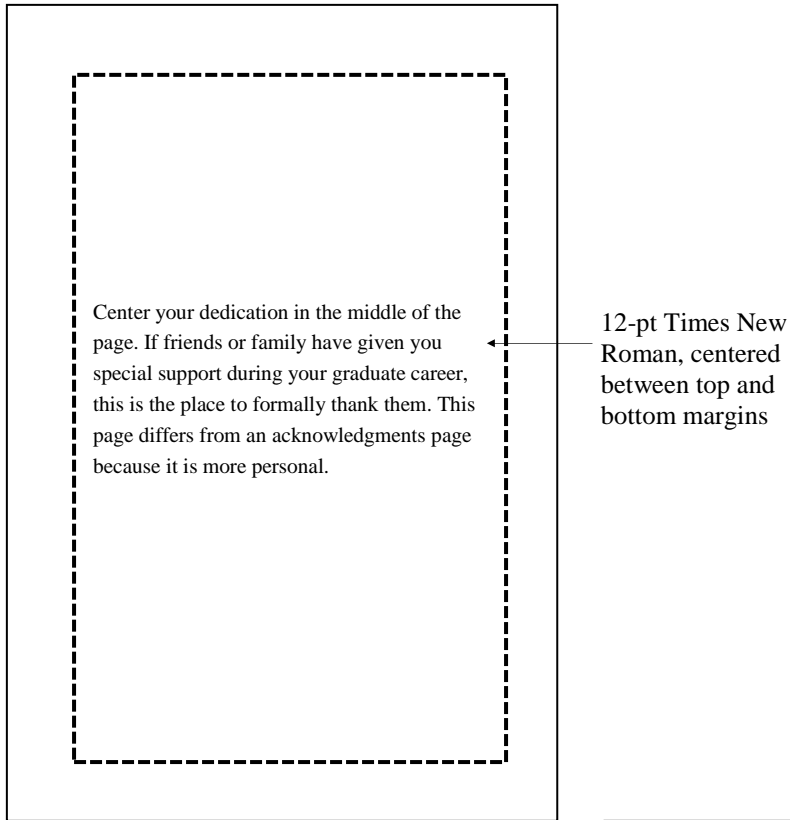


Figure 11. Example of dedication page

12-pt Times New Roman, double-spaced

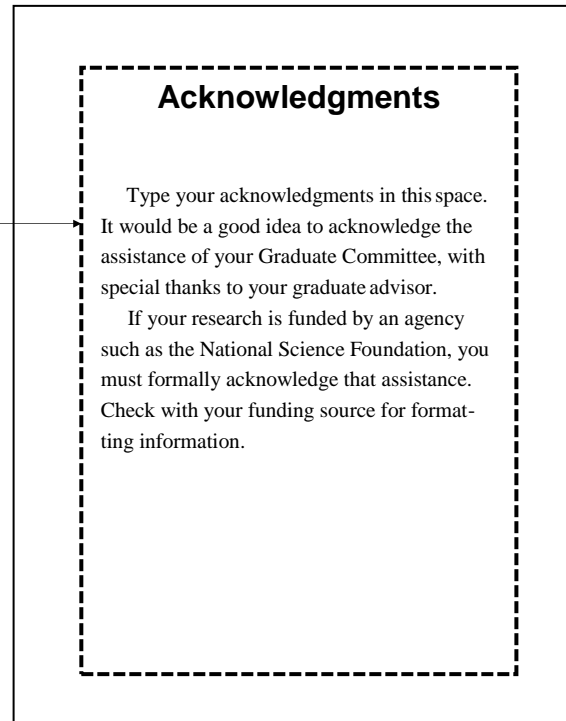


Figure 12. Example of acknowledgments page

List of Abbreviations

This page lists any special abbreviations you have used in your thesis. It is not necessary to include standard abbreviations, such as “ft” for foot/feet. Alphabetize your entries.

List of Symbols

This page is similar to the List of Abbreviations. If you have used special symbols in your document, include them on this page. See Figure 13 for an example of a list of abbreviations or symbols. These pages may be single-spaced.

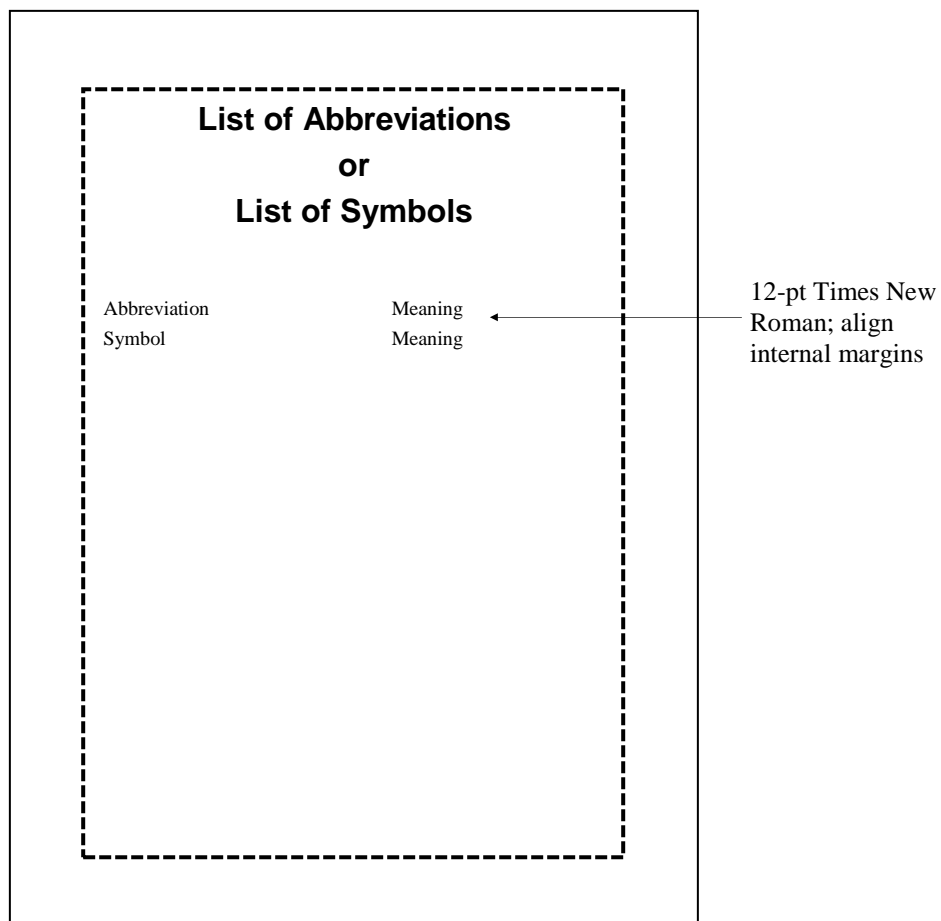


Figure 13. Example of list of abbreviations/ symbols page

Glossary

A glossary is a mini-dictionary defining specialized terms that you have used in your document. Use it if you have many terms; otherwise, simply define them in the text.

A glossary is provided as a convenience for the reader; Figure 14 shows an example. Format it like a list of symbols or abbreviations, and alphabetize your terms. Definitions on this page may be single-spaced.

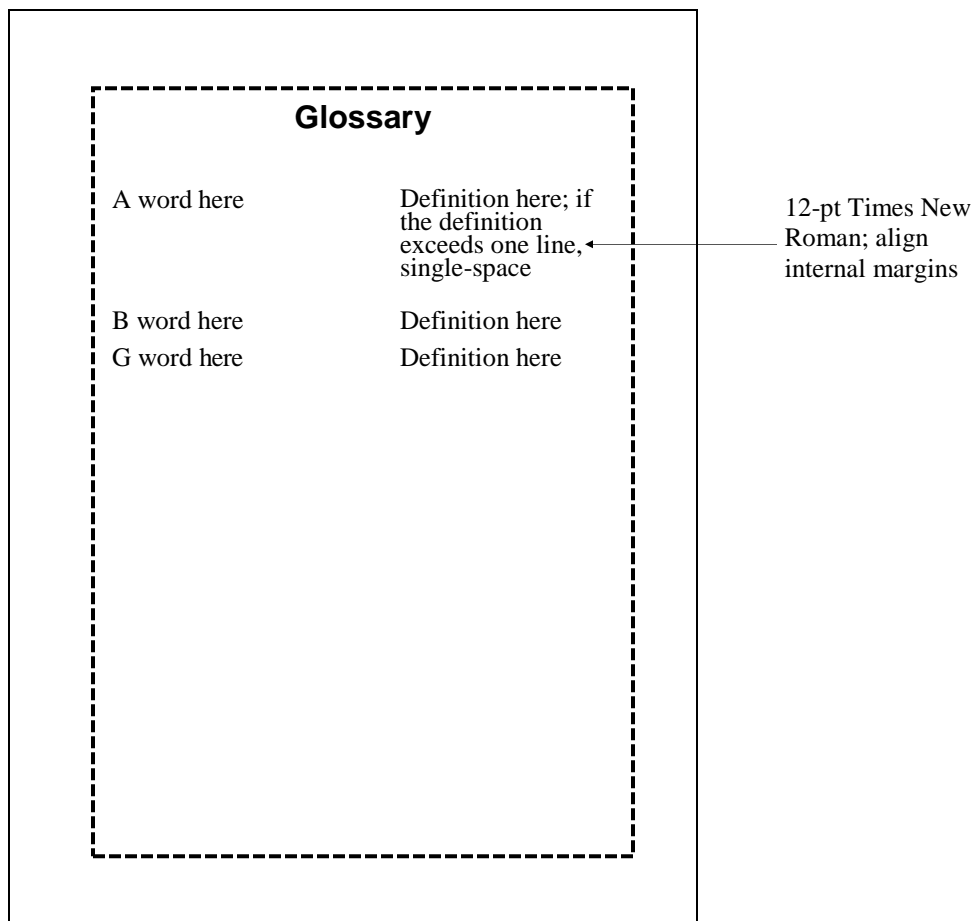


Figure 14. Example of a glossary

V. Document Body

Your document is a scholarly, archival document that will be hosted by the university library, and probably your department, for the life of the institution. As such, it displays not only your own particular research interests but represents the institution as well. It is essential, then, that your writing and graphical elements display care and precision. This section offers information on writing style and graphics, including copyright and permissions.

Writing Elements

Technical writing is very precise, characterized by attention to audience and purpose. You cannot achieve this if your writing is riddled with mechanical and grammar errors. Therefore, it is crucial that you spend appropriate time on the writing aspect of your document and seek assistance as needed.

Style

As a general rule of thumb, use third person, active voice: the writer should be absent from the document and the writing free of awkward verb phrases that impede readability.

Academic Integrity

All OIT students must adhere to the highest standards of ethical behavior. Plagiarism, data manipulation, or otherwise cheating while reporting research information is unacceptable and can result in suspension or expulsion from the institution. If you have difficulties paraphrasing or summarizing information from published sources, consult your graduate advisor or the OIT library webpage at [http://www.oit.edu/libraries/help/citing sources](http://www.oit.edu/libraries/help/citing_sources) for information on avoiding plagiarism.

You can access OIT's academic integrity policy, in its entirety, at <http://www.oit.edu/docs/default-source/Student-Affairs-/student-handbook/student-academic-integrity-policy.pdf?sfvrsn=4>.

Documentation

If you use outside sources for your document, you **must** acknowledge those formally in the text as well as in a list of references. Using the work of others without citation constitutes a violation of OIT's "Academic Integrity" policy, as well as copyright infringement. As a professional, you must credit the work of others.

Academic fields use different styles for in-text citations and reference lists, as well as composition matters such as units of measure, capitalization, abbreviations, and use of numerals. While the basic elements are the same for citations and references, the arrangement of those items differs from field to field. Be sure to use the most current version of the style manual associated with your field.

Table 2 lists the style manuals associated with several academic fields. The OIT library webpage also contains information on properly citing sources. As you are preparing your document, carefully follow the appropriate style. Not doing so will result in time-consuming revisions.

Table 2. Style manuals by field

Field	Style Manual	Website
Civil Engineering	<i>Chicago Manual of Style</i> , 16th ed.	http://www.chicagomanualofstyle.org/home.html
Manufacturing Engineering Technology	<i>Chicago Manual of Style</i> , 16th ed.	http://www.chicagomanualofstyle.org/home.html
Psychology	<i>Publications Manual of the American Psychological Association</i> , 6th ed.	http://apastyle.apa.org/
Renewable Energy Engineering	<i>IEEE Citation Reference</i>	http://www.ieee.org/documents/ieeecitationref.pdf

Copyright and Permissions

Current copyright law requires permission for using any quoted material exceeding 300-500 words, depending on the overall length of the published source. Works in the public domain—including older uncopyrighted material, government publications, and works with expired copyrights—do not require copyright release. To request permissions to use copyrighted material, contact the publisher, as authors typically do not hold the copyright. Be aware that permissions may involve a fee, along with a limitation on the number of copies that you can use. See the *Graduate Handbook* for permissions forms. You will still need to cite sources in the text and include them in your reference list.

All Web material is considered to be copyrighted, whether or not the © appears on the page. To request permissions, contact the website publisher.

For complete information on copyright regulations, consult <http://www.copyright.gov/>. It is your responsibility to seek legal advice, if necessary, on issues related to copyright.

Text

The text of your document consists of three separate parts: introduction, body, and conclusion.

Introduction

An introduction supplies your reader with a summary and preview of content. While headings are not necessary, an introduction usually includes the following elements:

- Purpose and significance: a description of your topic or a problem statement and comments regarding its importance to your particular field, how it adds to the established body of knowledge or solves the problem
- Hypothesis(es) or research questions: a statement that incisively captures the major problem(s) that your document addresses
- Methodology: a brief explanation of research or problem-solving methods; this may also be a section in the document body, depending on your approach to your topic
- Arrangement: a brief explanation of the organization of your document

Body

The body comprises the bulk of your document, explaining in detail your research and results. Consider dividing it into several sections, for ease of both reading and writing. Take special care in regards to writing style and presentation of graphical elements.

Keep in mind that others may use your document while conducting their own research, so you will need to adhere to the highest ethical standards in presenting research results and data. If appropriate, you may need consult OIT's Institutional Review Board for permissions involving animal or human research.

Conclusion

The conclusion ends your document, summarizing major points. It may also include the following:

- Evaluation
- Recommendations
- Indication of further research

If recommendations are extensive, a separate section entitled "Recommendations" should precede your conclusion.

Graphical Elements

Graphical elements must meet the same standards as the rest of the document, including margin and pagination requirements. Technical graphics are classified as either tables, with information appearing in rows and columns, or figures, including schematics, maps, photographs, graphs, charts, and drawings. Anything that is not a table is a figure. Note that graphics supplement, not replace, textual discussion.

Consider using boxes around graphics to set them apart from the text. Tables naturally include a box, but box any figures that bleed into the text; for example, a photograph with a light background warrants a box.

Documentation

If you adapt a graphical element from another source, the figure caption must clearly indicate that, along with a standard citation. Note that “adaptation” indicates a clear change from the original, not something as simple as changing a solid line to a dotted line or changing the shading of an element.

Copyright and Permissions

Although most of the graphics in your document will be original, copyright law requires permissions for “extensive” use of graphics previously published. “Extensive” is defined as *one* illustration from a published source. If you wish to use graphics from a published or Web source, you must receive permission from the publisher; include the phrase “reprinted with permission” in your graphics caption.

Numbers and Captions

Number all tables and figures consecutively with Arabic numerals in the order that they are first mentioned in the text. Use a separate numbering system for tables and figures, as we have done in this guide. Graphics labels include both a number and a short caption that identifies graphical content. Captions should be relatively short and lower cased, except for the first letter of the first word and any proper nouns.

Spell out and capitalize the word “figure” or “table,” followed by the number and a period. Use 11-point Times New Roman italics. For figures, place the caption beneath the figure box, flush with the left side of the box, and double-spaced from the figure; for tables, place it above the table, flush left, and double-space between the caption and table.

Placement

Place each table and figure as close as possible to its first mention in the text, and include a textual reference, such as “see Figure 1 for an example of.....” For full-page graphics or those placed apart from the text, include your textual reference and refer the reader to the actual page; e.g., “ See Figure 14 on page 28 for.....”

Use landscape format for wide or long graphical elements, such as data tables continued on successive pages. If continued on successive pages, repeat the table/figure number and caption on each page, together with the word “cont’d.”

Use of color print and/or graphics is acceptable if the color provides clarity and increases understanding of the information; otherwise, use black and white.

Page Design

Word-processing programs allow the user many possibilities for both attractive and cluttered page design. Since your document represents the culmination of your graduate work, it should invite reading and be aesthetically pleasing. Figures 15-17, on pages 23-25, show some possibilities for integrating text and graphics.

While attention to the specifications in this guide will result in consistency, also consider the following when developing the final format of your thesis:

- Leave room around graphics to clearly separate them from the text
- Include paragraph breaks on every page for readability
- Avoid splitting text across a graphical element
- Avoid splitting a graphical element across pages; *e.g.*, a short table that appears at the end of a page may spill over to the next page
- Wrap text around smaller graphics to avoid awkward white space

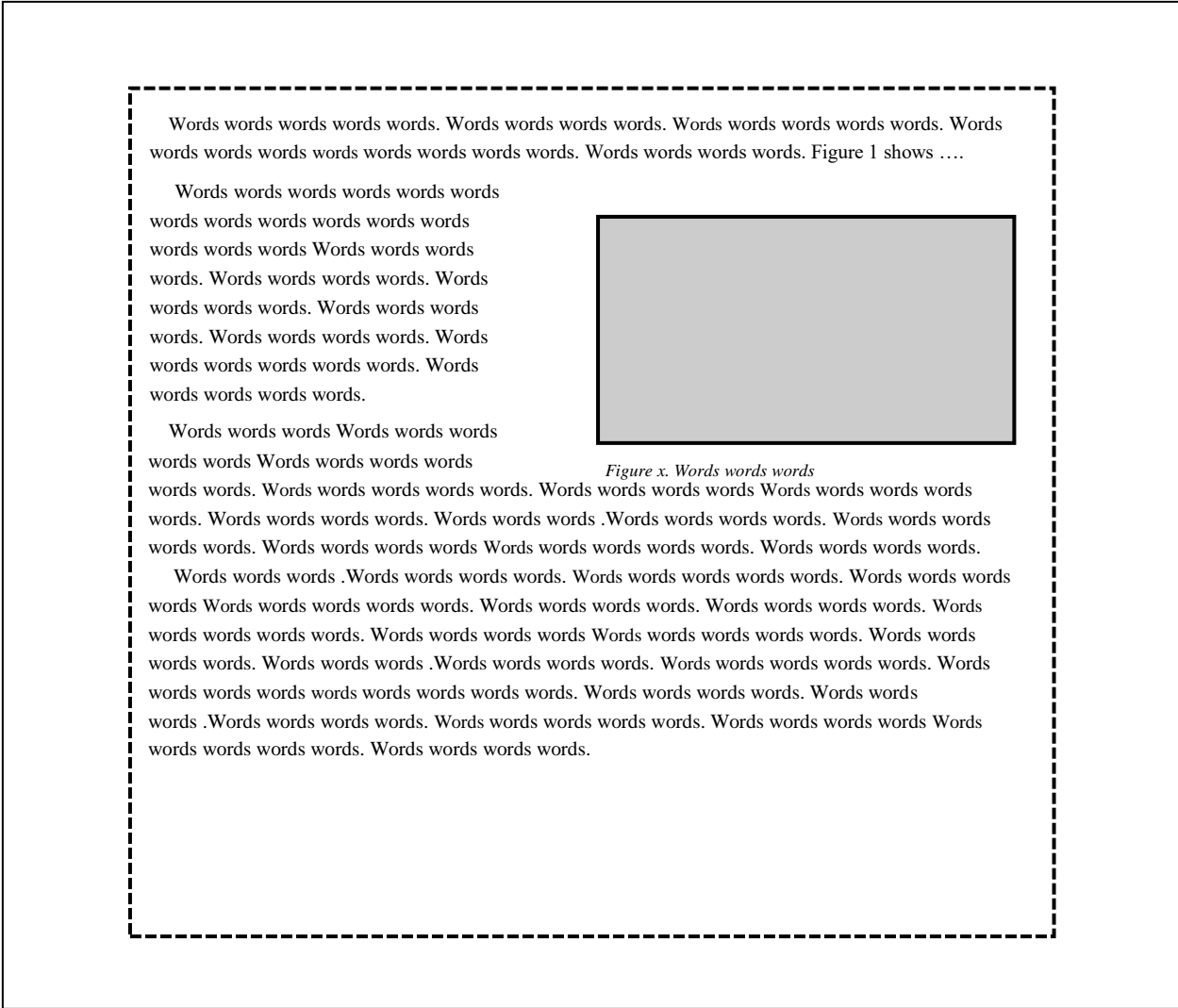


Figure 15. Page with text-wrapped graphic

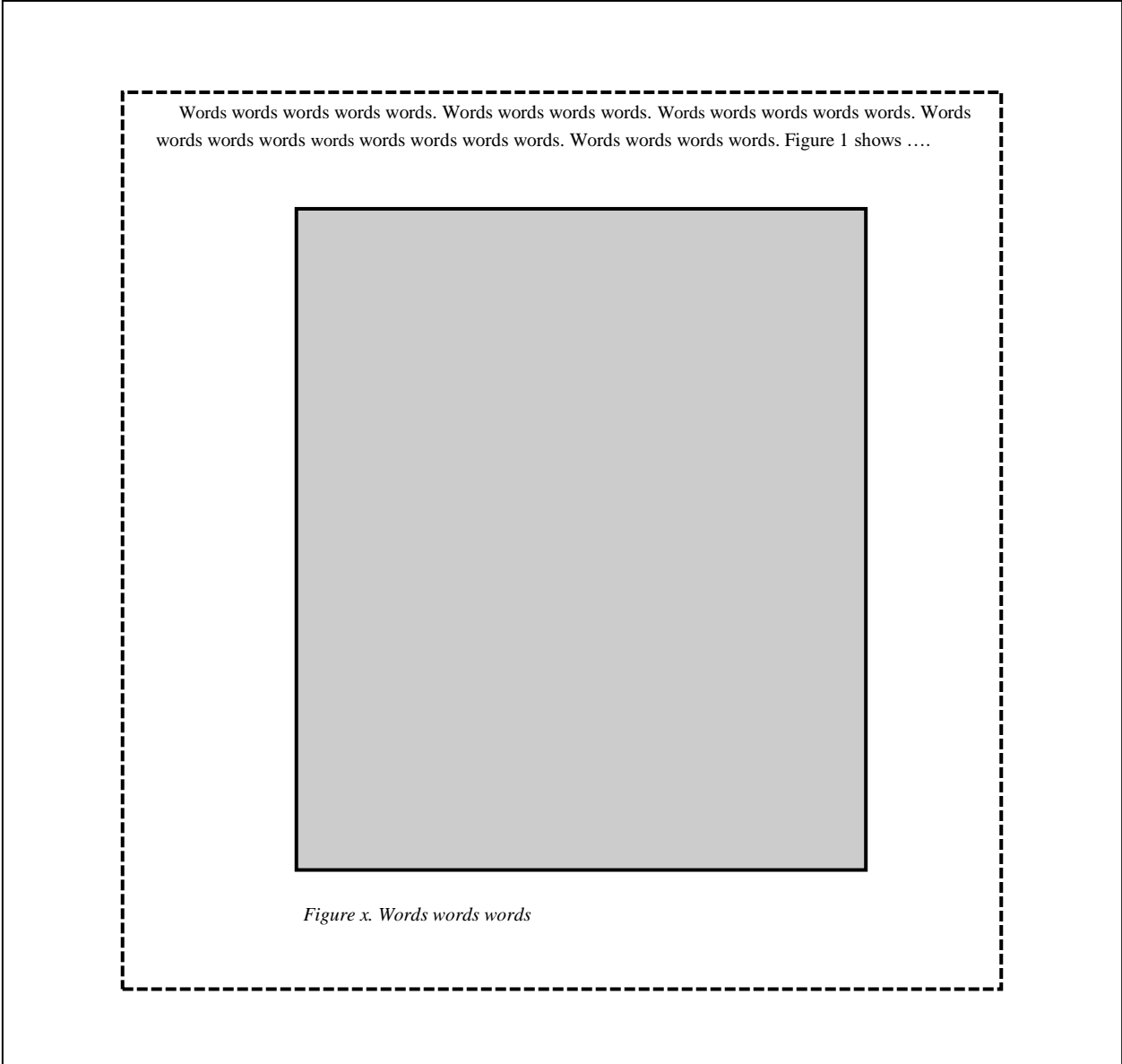


Figure 16. Page with larger graphic

Figure 17. Example of landscape orientation

Table 1. Landscape orientation for wide table

Head	Head	Head	Head	Head	Total
Data 1	Data	Data	Data	Data	###
Data 2	Data	Data	Data	Data	###
Data 3	Data	Data	Data	Data	###
Data 4	Data	Data	Data	Data	###
Data 5	Data	Data	Data	Data	###
Totals	###	###	###	###	###

VI. Ending Elements

Ending elements are those items that follow the text proper and include your list of references and, if appropriate, appendices.

References

After the conclusion of your document, you will organize all of the research materials that you have cited in the text into a list of references, following one of the styles indicated on page 19 of this guide. A reference list includes *only* those items that you have cited in the text; you may have read other materials, but do not include those. See Figure 18 for an example.

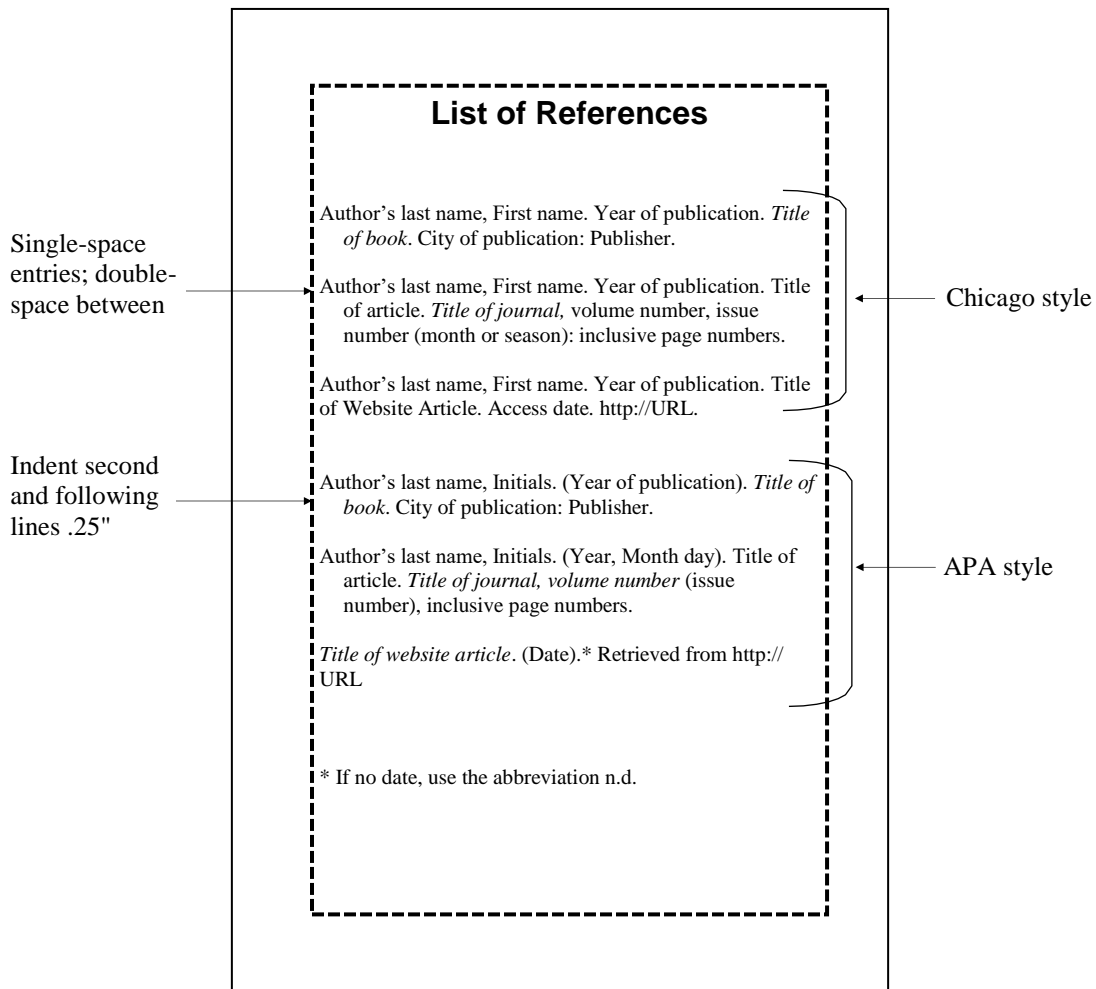


Figure 18. Reference page example

Note that formatting differs slightly than that of the text: single-space entries and double-space between. If your source wraps to a second or third line, which is common, indent .25".

Do not use hyperlinks and color in website addresses. Note that website references for some styles include an access date.

Appendices

Appendices are used to display information that is important, but not essential, to the text or items that would interrupt the flow of the text, such as lengthy calculations or complicated graphics. Adding appendices to pad the thesis is not an acceptable professional practice.

Typical material for an appendix includes the following:

- Lengthy calculations
- Field notes
- Multiple pages of oversized graphics (with prior approval)
- Lengthy graphics (*i.e.*, a multiple-page flow chart)
- Programming printouts
- Interview notes
- Completed survey forms
- Project logs