



A Handbook for Theses
and Dissertations



The Graduate School
THE UNIVERSITY OF UTAH

A HANDBOOK FOR THESES
AND DISSERTATIONS

The Graduate School
The University of Utah

2020

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GLOSSARY OF COMMON TERMS

Double space/regular double space: Extra space between lines of text. The majority of this handbook is double-spaced. In this glossary, there is a double space between each entry.

Em/En dashes: Punctuation that can be used in place of commas, parentheses, or colons. In many style guides, an en dash is used to indicate a range (e.g., 10–20) or to give equal weight between two items (e.g., a London–Chicago flight). An em dash is used similarly to a comma or colon to amplify a digression from the text (e.g., Studies—published and unpublished—are included). Consult your style guide for exact uses. An em dash (—) is longer than a hyphen (-) or en dash (–).

Final Reading Approval form: Indicates that a thesis/dissertation is ready to be submitted to the Thesis Office. The chair signs to indicate that a final reading has been performed and no more content changes are required. The department/college/school chair/dean signs to indicate that all the appropriate departmental procedures and policies were followed. The Thesis Office obtains the signature of the dean of The Graduate School after the editing process is completed.

Format approval: Indicates that the thesis/dissertation may be uploaded to ProQuest to begin the thesis release process.

Format approval process: Refers to the back-and-forth process in which students 1) submit a document; 2) receive corrections from an editor; 3) make the edits and resubmit a revised document to the editor. This process is repeated until format approval is granted.

Gaps (see white space): Spaces between text that have no relation to the end of the chapter, margins, or spacing scheme, for example, an extra space between paragraphs and a large margin or white space at the bottom of the page when it is not the end of a chapter. Some word processing programs may have a default to automatically add a gap between each paragraph. This feature should be turned off.

Heading space: A space that is larger than the double spaces used in a document. Heading spaces are used after main headings and before subheadings. Depending on the word processing program being used to write the document, there are different ways to create a heading space. The key is that they be created consistently throughout the document so that heading spaces are always the same size.

Headline style: A capitalization scheme in which the first letter of all major words is capitalized. For example: This Is Written in Headline Style. Subheadings, figure captions, and table titles must consistently use either headline style or sentence style capitalization.

Hyphen: Punctuation used between compound terms, compound adjectives, and syllable breaks at the end of a line of text. Please note that words with common prefixes (e.g., non, re, anti, pro, post, pre, micro, multi, etc.) should be treated as one word except when preceding a capitalized word or number (e.g., post-1970) or when the word could be misunderstood (e.g., un-ionized would be confused with unionized). Hyphens are also generally used when the prefix ends and the base word begins with the same vowel (e.g., meta-analysis).

Inverted pyramid: Used for main headings or subheadings longer than 4^{1/2} inches in which each line is shorter than the one before. The University of Utah uses the inverted pyramid format for all main headings and subheadings that are more than one line.

Local numbering: Numbers given to subheadings, tables and/or figures, equations, etc. to indicate the chapter and number within that chapter of a given subheading, table, or figure, etc. For example, a table numbered 2.3 would indicate that it is the third table to appear in Chapter 2.

Main headings: Headings that indicate a new chapter or titled section of the document. Examples include ABSTRACT, CHAPTER 5, SELECTED BIBLIOGRAPHY, LIST OF FIGURES, and chapter titles (or titled sections if not using chapters). Main headings always start on a new page, 2 inches from the top, and are in all capital letters.

Period leaders: Evenly spaced periods placed closely together to align information in a list. Period leaders are used most commonly in the Table of Contents, List of Figures, and List of Tables.

Preliminary review: A cursory review of a document in which the editor addresses only formatting issues such as margins, spacing scheme, placement of tables/figures, gaps/white space, use of main heading, subheadings, etc. Preliminary reviews are performed by the Thesis Office in two instances: 1) at the student's request prior to a defense (can be performed on a single chapter); 2) when a document is submitted after the defense with major formatting errors that will cause the text to shift (called a Format Review in this case). *Documents with major formatting errors that have been submitted on the deadline will not be considered for graduation in that semester.

Reprint: Previously published material included in a thesis/dissertation as it appears in its published form. Permission from the copyright holder is required to reprint any previously published material.

Sentence style: A capitalization scheme in which only the first letter of the first word is capitalized (also proper nouns and acronyms). For example: This is written in sentence style. Subheadings, figure captions, and table titles must consistently use either sentence style or headline style capitalization.

Single space: Text with no additional space between lines of text. The individual entries in this glossary are single-spaced but are separated from other entries by a double space.

Spacing scheme: The size of single spaces, double spaces, and heading spaces within a document. All of these spaces must be of consistent size, that is, all single spaces are the same size, all double spaces are the same size, and all heading spaces are the same size.

Statement of Approval form: A form that takes the place of the Supervisory Committee and Final Reading Approvals in a thesis/dissertation. It is placed after the copyright page and before the abstract. The student's name, the committee members' names, the dates of their approval, the name of the department/college/school chair/dean, and the student's department are typed on the form. There are no signatures on this form.

Style guide: A manual/journal used to determine the writing style of a document. Manuals of style include IEEE, ACM, AIP, Turabian, ACA, and APA among others. Academic journal author guides are also accepted. The student must follow a style guide approved by their department when writing the manuscript. The style guide determines the method of in-text citations, references, and the use of numerals, terms, etc. The Thesis Office must be informed of which style guide was followed.

Subheadings: Headings that divide chapters or titled sections into subsections. Unlike main headings, subheadings are not in all capital letters and can have several levels, including paragraph subheadings.

Supervisory Committee Approval form: Indicates that a thesis/dissertation is ready to be approved by the department/college/school chair/dean. The Supervisory Committee Approval form indicates that 1) the committee has read the thesis/dissertation, 2) the content and style of the thesis/dissertation are acceptable, and 3) by majority vote, the manuscript has been found to be satisfactory.

Thesis release: Issued in the student's file in Graduate Student Tracking on Campus Information Services when the final upload to ProQuest has been approved.

White space (see gaps): Parts of a page that contain no marks, text, tables, figures, etc. White space is usually used to indicate margins and the end of chapters. Large whitespace should not appear on the top or bottom of the page except a) when the page is used only for figures or tables (i.e., no text appears on the page), b) when a subheading at the bottom of a page has to be moved to the top of the next page because there is not room for at least two lines of continuous text following the subheading, or c) at the end of the chapter. It is incorrect to have a large white space between text and figures or tables.

Widows and orphans: Some word processing programs like Microsoft Word and LaTeX may automatically force text to move to another page in order to avoid having the first line of a paragraph at the bottom of the page (i.e., an orphan) or the last line of a paragraph on the top of the page (i.e., a widow). This default frequently causes the bottom margin to be larger than 1 inch and therefore should be turned off.

CHAPTER 1

GENERAL INFORMATION AND UNIVERSITY REGULATIONS

This handbook has been prepared by The Graduate School of the University of Utah to aid students writing theses and dissertations. The handbook must be used in conjunction with one style manual accepted by the student's department (see Chapter 3) for references, citations, and other stylistic considerations. It is the student's responsibility to be familiar with the regulations governing theses and dissertations and all other requirements for graduation. The following is a general outline for preparing a thesis or dissertation for approval by the student's department and The Graduate School.

Procedures

1. Plan a schedule for the research and writing of the thesis or dissertation with the chair of the supervisory committee.
2. **Consult this handbook and the thesis and dissertation editor with questions about style guide selection, the use of illustrations, the use of copyrighted materials, and other aspects of manuscript preparation.**
3. Submit the thesis or dissertation to members of the supervisory committee. The

chair must receive a copy at least 3 weeks before the final oral examination. The other members of the committee must receive a copy at least 2 weeks before the oral examination. Some departments require more than 3 weeks; check with your chair. **A manuscript (PDF copy only) may be submitted to the Thesis Office for “preliminary review” at any time before the deadline.** The manuscript will not be read at this time, but it will be examined for obvious errors in University format. After the defense, manuscripts are accepted for Format Approval only.

4. Defend the thesis or dissertation at a public oral examination scheduled and announced by the committee. The defense should be scheduled early enough for the student to make any changes requested by the committee and to still submit the departmentally-approved manuscript to the Thesis Office for Format Approval no later than 7 weeks prior to the closing date of the semester (i.e., the last day of final examinations; see the Calendar on The Graduate School website for specific dates), 8 weeks for manuscripts in excess of 200 pages. All graduate students must be registered for at least one course from the time of formal admission through completion of all requirements for the degree they are seeking including the defense, unless granted an official leave of absence.
5. Make any changes to the manuscript that the committee may require after the oral defense. Have the approval forms signed digitally by the committee members. By majority vote the members of the supervisory committee certify on the Supervisory Committee Approval form that the thesis or dissertation has been found satisfactory for the degree.
6. The committee chair digitally signs the Final Reading Approval form and certifies

that the final thesis or dissertation has been read and approved, that all materials are in order, and that the manuscript is ready to submit to The Graduate School. After obtaining approval of the committee and the chair as final reader, the student submits the manuscript to the department chair or dean of the student's college or school for approval to submit the manuscript to the Thesis Office for Format Approval. **A manuscript will not be accepted for Format Approval until it has been successfully defended and signatures of a majority of the supervisory committee, the final reader, and the chair of the department have been obtained.**

The signature of the dean of The Graduate School is given after the final manuscript is approved by the thesis editor, not before the first submission to the Thesis Office. The information from the approval forms is included in the Statement of Approval, which is not signed.

7. Submit a PDF copy of the thesis or dissertation that has been publicly defended and approved by the supervisory committee, the final reader, and the chair of the department to the Thesis Office for Format Approval. To be considered for graduation in a particular semester, the defended and committee-approved thesis or dissertation must be submitted 7 weeks prior to the closing date of the semester, 8 weeks for manuscripts in excess of 200 pages. **IMPORTANT: The manuscript submitted must adhere to the formatting guidelines in this handbook in order to qualify as meeting the deadline.** If manuscripts are submitted after the Format Approval deadline (see the Calendar on The Graduate School website), they will not be considered for graduation in that semester.

Manuscripts are reviewed in the order in which they are received.

7. After notification by the Thesis Office that the submitted manuscript has been read, contact the thesis editor regarding any corrections. Discussion of corrections is by appointment only. Once all corrections have been made, a Format Approval is issued.
8. After receiving Format Approval, the student will be given instructions for uploading a PDF file to ProQuest/UMI. The final manuscript should be uploaded no later than the Monday before examination week (the final week of the semester; see final submission date listed in the Calendar on The Graduate School website). If the final manuscript is satisfactory, the dean of The Graduate School signs the Final Reading Approval form and a Thesis Release is issued. **All processing of the manuscript must be completed by the last day of the semester for graduation in the semester.**

If a Thesis Release cannot be issued by the closing date of the semester, the student will need to reapply for graduation for the next semester. The diploma is also dated that semester but the student may obtain a Statement of Completion from the Office of the Registrar.

Statement of Completion

A Statement of Completion may be obtained from the Office of the Registrar after the Thesis Release is issued if the student's file is complete in the Graduate Records Office and all grades have been recorded for the Application for Admission to Candidacy (for master's candidates) or the Program of Study (for doctoral candidates). The Statement, which may be used in place of the diploma, shows the month of graduation and the date all the requirements for the degree were completed. Diplomas are mailed to students by the Office of the Registrar approximately 3 months after the closing date of the semester of graduation.

University Regulations

Topic Approval

The supervisory committee is responsible for approving topics for theses and dissertations. No thesis or dissertation subject may be approved that prevents the completed manuscript from being made available for public use.

Contract Research

According to the standard research agreement for sponsored, contract work, the University of Utah, "... as a state institution of higher education, engages only in research that is compatible, consistent and beneficial to its academic role and mission and therefore significant results of research activities must be reasonably available for publication. The University agrees, however, for a period not to exceed six (6) months following completion of the project, that it will obtain sponsor approval prior to

publication, which approval will not be unreasonably withheld by sponsor. The University agrees to keep confidential any sponsor proprietary information supplied to it by sponsor during the course of research performed by the University, and such information will not be included in any published material without prior approval by sponsor” (Office of the University of Utah Vice President for Research).

Oral Defense

The supervisory committee schedules a public oral examination at which time the candidate must defend the thesis or dissertation satisfactorily. The departmental director of graduate studies and the supervisory committee determine how the oral defense is publicized. The supervisory committee approves the manuscript after a successful defense.

Submission of Thesis or Dissertation

Following the editing and format approval process, the final thesis or dissertation is uploaded to ProQuest/UMI for public sale and distribution to the University of Utah libraries for public access.

Publication of Theses and Dissertations Involving Patents

and Restricted Data

Departures from the policies above must be approved by the dean of The Graduate School, in consultation with the Graduate Council, and can be made only in exceptional circumstances in which a delay is required. Examples are (a) to protect the

rights of patent applicants, (b) to prevent unjust economic exploitation, (c) to protect the privacy of research subjects, and (d) to avoid copyright conflicts. To protect the rights of patent applicants and to prevent unjust economic exploitation, the dean of The Graduate School, in consultation with the Graduate Council, may delay granting of the degree and/or publication of the thesis or dissertation. The committee chair, with the knowledge of the department chair, must approve requests for this action. In either case the delay should be no longer than 3 years, with possible extension if approved by the dean of The Graduate School.

Students may request up to a 3-year delayed release of their thesis or dissertation through ProQuest/UMI.

Content Requirements

Master's and doctoral candidates must submit a thesis or dissertation "... embodying the results of scientific or scholarly research or artistic creativity which gives evidence of originality and ability in independent investigation and is a contribution to knowledge or the creative arts." Manuscripts "... must show a mastery of the relevant literature and be represented in acceptable style. The style and format. . . are determined by departmental policy and registered with the thesis editor, who approves the style and format of individual [theses and] dissertations in accordance with departmental policy" (University Regulations Library 6-203-III-F).

The contents of the thesis or dissertation must meet the standards of the college, the department, and the supervisory committee of the candidate. Style, content, and documentation of the thesis or dissertation are approved by the supervisory committee.

The thesis editor approves format and editorial style of the manuscript prior to graduation.

Coauthored Theses and Dissertations

Coauthors as degree candidates

On rare occasions, a single thesis that a student has coauthored with another student (or students), each of whom is a candidate for a master's degree, may be submitted provided the supervisory committee gives prior recommendation and approval to each student's role in the collaboration, the thesis represents the work equivalent of a single, independent thesis for each coauthor (i.e., the scope, depth of analysis, and sophistication of approach reflect the work of more than one author), and it is evident that each student has made a significant contribution to the thesis. Candidates for the doctoral degree may not collaborate on a single dissertation.

Material coauthored with nonstudent(s)

A degree candidate may use previously published or submitted material that has been coauthored with a nonstudent (e.g., faculty member, research director) as part or all of a thesis or dissertation if the supervisory committee recommends the material be included and has determined the candidate's role in the collaboration "... gives evidence of originality and ability in independent investigation and is a contribution to knowledge or the creative arts" (University Regulations Library 6-203-III-F).

Multiple author releases required

In all cases of multiple authorship, releases from the coauthor(s) must be submitted to the thesis editor prior to graduation. A link to the form for the legal release required are available on The Graduate School website (see “Thesis and Dissertation Forms”).

Approval Requirements

Before the final submission of the manuscript for a Thesis Release, approvals must be received from the supervisory committee members, who sign the Supervisory Committee Approval form; from the final reader of the manuscript and the chair of the department (or dean of the college/school), who sign the Final Reading Approval form; and from the thesis editor, who issues Format Approval.

Publication Requirements

Doctoral dissertations and master’s theses must be available to other scholars and to the general public. The University publication requirement is met if one of the following occurs:

1. The entire dissertation or thesis is submitted to ProQuest/UMI and copies are made available for public sale.
2. The abstract only is published if the entire dissertation or thesis has been previously published and distributed, exclusive of vanity publishing. The candidate may elect to publish the entire previously published work.

Copyright

U.S. copyright law is complex. Details of the law, including an explanation of “fair use,” may be found at <http://www.gradschool.utah.edu/thesis/lib-copyright-php>. “Fair use” is a legal defense and does not grant students the right, even for educational or research purposes, to use other researchers’/authors’ text, images, tables, figures, etc. without obtaining the appropriate permission. It may be advisable to obtain permission early, or to avoid using material with uncertain/questionable copyright. **Students are responsible for obtaining and providing proof of permission to use copyrighted material to the Thesis Office.** Table 1.1 provides a general guideline for determining if material is likely to be copyrighted based on age, authorship, and publication status.

Students preparing theses and dissertations must be aware of how to protect their own works and how to avoid infringing upon the works of others. Protection of one’s own work is accomplished through placement of a copyright notice and/or registration of copyright.

Some materials that require permission:

- Long Quotations: Quotations from published material or another student’s thesis/dissertation, research, etc. that is over one and on-half single-spaced pages.
- Reproduced Publications: Any material, including journal articles, figures, tables, survey instruments, and questionnaires, that has been published requires permission even if the student is the original creator of these works as copyright is usually transferred in order to publish.

Table 1.1

Copyright guideline. Adapted from “Copyright Law and Graduate Research: New Media, New Rights, and Your New Dissertation.” Kenneth D. Crews, Columbia University, © copyright 2000, ProQuest).

Creation / Publication	General Rule of Copyright Duration
Created in or after 1978 by a named author acting in an individual capacity, whether published or not.	Life of the author, plus 70 years.
Created in or after 1978 by an anonymous or pseudonymous author, or by a corporate author, or a work-made-for-hire.	The earlier of either 95 years from publication, or 120 years from creation.
Created before 1978, but not published.	The latter of either 70 years after the death of the author, or through December 31, 2002. The expiration date is extended through December 31, 2047, if the copyright owner publishes the work before the end of 2002.
Published after 1992 and before 1978 with copyright notice and renewed if required.	95 years from the date of original publication.
Created and published before 1923.	Copyright has expired.

Note: Crews’ book can viewed and/or downloaded (for free) in its entirety at:
http://www.proquest.com/products_umi/dissertations/copyright/

- Internet Sources: Material found on the Internet is no different than material from a book, journal, or other publication. Easy access and wide availability does not nullify copyright.

Notice of Copyright

Copyright protection is obtained by placing notice of copyright on the thesis or dissertation.

Copyright © Your Name (as it appears on the Title Page) 2014

All Rights Reserved

Registration of Copyright

Registration is not required, but it does place details of a copyright claim on public record. Registration is accomplished by filing federal form TX with the U.S. Copyright Office, Library of Congress, Washington DC 20559, or having ProQuest/UMI register the claim.

Registration of copyright allows the owner to qualify for an award of statutory damages in cases of infringement. Otherwise, a copyright owner will be awarded actual damages only.

Avoiding Infringement

“Permission to Quote Copyrighted Material” forms are available under “Thesis and Dissertation Forms.” Obtaining permission to quote copyrighted material is federal law. Students are required to obtain written permission (hard copy, scanned copy,

or email) and submit it to the Thesis Office for any figure or table in its entirety, and any poem or musical composition, words or music of popular songs, questionnaires, prose beyond the amount defined as "fair use," etc.

Students must use the credit line specified by the copyright owner and place it where required by the owner.

All sources must be cited whenever use is made of the material of others, even if the use is limited and no copyright permission is necessary. Direct use of the work of others without citing the source is plagiarism.

Use of Journal Articles in Theses or Dissertations

Obtaining Approval

If students wish to use articles accepted or published by reputable scholarly journals in a thesis or dissertation or to type the thesis or dissertation in the style of a particular journal for subsequent submission, they must first obtain the recommendation and approval of the supervisory committee. If the journal is not on the list of department-approved journals and manuals of style on The Graduate School website, the chair of the department or the director of graduate studies must notify the thesis editor of departmental approval of the journal, and the student must submit a sample of the journal and/or journal guidelines.

Use of Previously Published Material

Appendix B outlines the procedures for the incorporation of previously published, accepted, and submitted articles as chapters of a thesis or dissertation.

A thesis or dissertation containing one or more articles published by a scholarly journal must meet all format specifications outlined in this handbook. Previously published articles are treated as separate chapters (or titled sections). They may be combined in a manuscript with chapters that have not been previously published. Reprints of previously published articles used in theses and dissertations must meet University margin requirements. Pages of reprints must still be numbered in sequence with the rest of the manuscript.

More than one reprint may be used in the thesis or dissertation if the specifications noted above are met and the supervisory committee considers the subject materials to be related. One reprint may be used as all of the thesis or dissertation if the specifications noted above are met.

The title of the thesis or dissertation must reflect the entire work. There must be an abstract summarizing the entire work, even though individual chapters may have abstracts. Citation and reference style may vary for published chapters.

Any use of previously published material requires that permission to quote copyrighted material be obtained from the copyright owner(s) and filed in the Thesis Office. Multiple author release(s), if required, must also be filed.

Use of Material Accepted for Publication

An article or articles that are accepted by journals but have not yet been published may be used as part of a thesis or dissertation. Articles/chapters that have been submitted or accepted for publication but are not yet published must follow the formatting as demonstrated and described in this handbook. Running heads (i.e., an abbreviated title of

the manuscript often with the author's last name printed in the upper margin of each page) may not be used, and tables and figures must be referred to by number in the text and placed after their first reference.

Property Rights

Publication rights (copyright) are reserved by the author, subject to the provisions of research contracts, patent rights, or other agreements made by the author with the University.

CHAPTER 2

CONTENT AND ORGANIZATION OF THE MANUSCRIPT

In this chapter, each component of the manuscript is listed in the order it occurs. Format details are specified for each page. Samples of the major parts of the manuscript are provided as figures.

Preliminary Pages

Preliminary pages are, in order, the title page; copyright page; Statement of Thesis/Dissertation Approval; abstract; dedication (optional); frontispiece (optional); epigraph (optional); table of contents; lists of tables, figures, symbols, and abbreviations; and acknowledgments (optional). See Table 2.1 for a detailed explanation of the order preliminary pages may appear, which are mandatory, and correct pagination.

The preliminary pages are counted in sequence (except the copyright page, which is neither counted nor numbered). Any page with a major heading on it (title page, abstract, table of contents, etc.) is counted, but no page number is typed on the page. Second pages to the abstract, table of contents, lists, and acknowledgments are numbered with lower case Roman numerals centered within the left and right thesis margins and between the bottom margin and the bottom edge of the page. See the preliminary pages in

Table 2.1: Order of preliminary pages, indicating which are mandatory and where page numbers should be included

Page	Required	Counted	Visible Page Number
Title Page	Mandatory	Yes	No
Copyright Page	Mandatory	No	No
Statement of Thesis/Dissertation Approval	Mandatory	Yes	First page no, additional pages yes
Abstract	Mandatory	Yes	First page no, additional pages yes
Dedication	Optional	Yes	No
Frontispiece	Optional	Yes	No
Epigraph	Optional	Yes	No
Table of Contents	Mandatory	Yes	First page no, additional pages yes
Lists of Tables, List of Figures	Mandatory if between 5-2	Yes	First page no, additional pages yes
List of Symbols, List of Abbreviation	Optional	Yes	First page no, additional pages yes
Acknowledgements	Optional	Yes	First page no, additional pages yes
Preface (includes Acknowledgements)	Optional	Yes	First page no, additional pages yes

Note: Page numbers in the preliminary pages appear centered on the bottom of the page in lower case Roman numerals. This differs from page numbers in the text, which appear on the top right of the page and use Arabic numerals. Note that although the table has a landscape orientation, the paper number remains in the upper right corner for binding of the thesis/dissertation.

this handbook for an example.

Title Page

The title page is page i (Roman numeral) of the manuscript (page number not shown).

The title of the thesis or dissertation is typed in all capital letters. The title should be placed in the same size and style of font as that used for major headings throughout the manuscript. If longer than 4 1/2 inches, the title should be double spaced and arranged in an inverted pyramid. The title should be a concise yet comprehensive description of the contents for cataloging and data retrieval purposes. Initials, abbreviations, acronyms, numerals, formulas, super/subscripts, and symbols should only be used in the title with careful consideration of maximizing search results for future readers. Consult the thesis editor.

The word “by” follows six lines below the title. The **full legal name** of the author follows after a double space. The name is not typed in all capital letters.

The **statement** “A thesis submitted to the faculty of The University of Utah in partial fulfillment of the requirements for the degree of” appears in the middle of the title page six lines below the title (see Figure 2.1). For doctoral candidates, the phrasing reads “A dissertation submitted. . .”

The appropriate **degree** follows six lines below the statement. The degree program is specified if the name of the program and the department are different. For example, since the Department of Civil and Environmental Engineering only offers graduate degrees in Civil and Environmental Engineering, the degree would simply be

MAXIMIZING THE EFFICIENCY OF A
MASTER-PLANNED COMMUNITY

by

Alan T. Patterson

A thesis submitted to the faculty of
The University of Utah
in partial fulfillment of the requirements for the degree of

Master of Science

Department of Civil and Environmental Engineering

The University of Utah

December 2010

Figure 2.1 Sample title page of a master's thesis with degree and department the same. Students submitting a dissertation would simply change the word thesis to dissertation. Note the spacing of elements on this sample title page.

“Doctor of Philosophy” or “Master of Science” (see Figure 2.1). The School of Computing, on the other hand, offers multiple degrees, such as Computing and Computer Science, so the degree would be “Doctor of Philosophy” or “Master of Science” followed by “in” followed by “Computer Science” or Computer Science,” all double spaced (see Figure 2.2).

Six lines below the degree field, the full name of the **department** is listed on the title page.

The name of the **institution**, “The University of Utah,” is listed a double space below the department name.

The **date** appears on the title page a double space below “The University of Utah.” Only the month and year appear, with no punctuation separating them. The month indicates the **last month** in the semester the degree is granted: fall semester, December; spring semester, May; summer semester, August.

Copyright Page

The second page is the copyright page, which is uncounted and unnumbered. A copyright notice appears in every copy of the thesis or dissertation. The notice, as illustrated in Figure 2.3, is centered within the thesis margins and the top and bottom margins of the page. There is a double space between the two lines.

Statement of Thesis/Dissertation Approval

The Statement of Thesis/Dissertation approval is page ii (Roman numeral) of the manuscript (page number not shown). This Statement is prepared as shown in Figure 2.4

A NEW SET OF ALGORITHMS FOR INCREASING
MEMORY CAPACITY

by

Jennifer Lynn Stanford

A dissertation submitted to the faculty of
The University of Utah
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

in

Computer Science

School of Computing

The University of Utah

August 2010

Figure 2.2 Sample title page of a doctoral dissertation with a different degree and department. Students submitting a thesis would simply change the word dissertation to thesis. Note the spacing of elements on this sample title page.

Copyright © Student's Full Legal Name (as it appears on the title page) 2020

All Rights Reserved

Figure 2.3 Sample of a copyright page. The student's name should match what appears on the title page and the Statement of Approval. Note the spacing of elements on this sample copyright page.

(for master's students) and Figure 2.5 (for doctoral students). Templates in Word .doc format are available on The Graduate School website under "Thesis and Dissertation Forms."

The Statement of Thesis/Dissertation Approval form replaces the signed Supervisory Committee and Final Reading Approvals in the electronic document. It signifies that the thesis or dissertation has been approved by the committee chair and a majority of the members of the committee and by the department chair and the dean of The Graduate School. The names of any committee members who did not approve the thesis or dissertation are not dated.

The full name of the student, as it appears on the title page and copyright page, must be used.

As with the digital signature forms, full legal names of committee members must be listed. Neither degrees nor titles should be listed with the names of faculty members. No signatures are used on this form.

Abstract

The abstract is page iii, unnumbered; if there is a second page, it is page iv, and a number appears on the page. The abstract is a concise, carefully composed summary of the contents of the thesis or dissertation. In the abstract, the author defines the problem, describes the research method or design, and reports the results and conclusions. No diagrams, illustrations, subheadings, or citations appear in the abstract. The abstract is limited to 350 words (approximately one and one-half pages double-spaced). A copy of the abstract of all doctoral candidates is published in Dissertation Abstracts International.

The word ABSTRACT is placed 2 inches from the top of the page in all capital letters. Following a heading space (larger than a double space; see Glossary for definition), the abstract text begins, with the first line indented the same size space as for the paragraphs in the remainder of the manuscript. The text of the abstract must be double-spaced.

If a manuscript is written in a foreign language, the abstract is in the same language, but an English version (or translation) of the abstract must precede the foreign language abstract. The two abstracts are listed as one in the table of contents. The first page of each version is unnumbered but counted. If there is a second page to each version of the abstract, the page number (lower-case Roman numeral) is centered between the left and right margin and between the bottom margin and the bottom edge of the page.

Dedication

The dedication is an optional entry; enumeration continues in sequence, but no page number appears on the page. It follows the abstract and precedes the table of contents. Often only one or two lines, it is centered within the top and bottom margins of the page and within the thesis margins. It is not labeled “Dedication” and is not listed in the table of contents.

Frontispiece and Epigraph

These are infrequently used entries. The frontispiece is an illustration that alerts the reader to the major theme of the thesis or dissertation. An epigraph is a quotation of unusual aptness and relevance.

Contents or Table of Contents

The table of contents follows the abstract (or dedication if one is used). The word CONTENTS (or TABLE OF CONTENTS) is placed 2 inches from the top of the page in all capital letters. Following a heading space, the table of contents. The table of contents, essentially an outline of the manuscript, lists the preliminary pages beginning with the abstract (page iii). It does not list a frontispiece, dedication, or epigraph if these are used, nor is the table of contents listed in the table of contents; these pages are, however, counted. The list of figures and list of tables, if used, are included (see the Table of Contents in this handbook for a sample using numbered chapters; see Figures 2.6, 2.7, and 2.8 for additional options).

All chapters or titled sections and all first-level subheadings of the manuscript are listed in the table of contents. It is not necessary and, in manuscripts with numerous second- and third- level subheadings, it is not recommended to list other than first-level subheadings. Beginning page numbers of each titled section listed are lined up with each listing by a row of evenly spaced, aligned period leaders. Page 1 begins the text. The numbers, titles, and subheadings of chapters or titled sections used in the table of contents must agree **exactly** in wording and capitalization with the way they appear on the actual page.

The table of contents reflects the relationship of the chapters and subheadings. Chapter titles appear in all capital letters, as do titles of appendices. First-level subheadings can be headline style (the first letter of all major words capitalized) or sentence style (the first letter of the first word capitalized). Subheadings are neither underlined nor italicized in the table of contents. If the table of contents continues

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Figure 2.6 Sample table of contents using chapters and a local numbering scheme for subheadings. Note the spacing and that the word chapter is used only once. Adapted from Phelps, R. (2009). A two-step model of colon adenoma initiation and progressions that requires CtBP1 and KRAS following loss of APC, Doctoral Dissertation, the University of Utah, Salt Lake City.

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Figure 2.7 Sample table of contents using titled sections rather than chapters. Note the spacing and that the word chapter is used only once. Adapted from Wessel, J. (2009). *The Muslim Brotherhood in Egypt and Jordan: A history of modern Islamic fundamentalism*, Master’s Thesis, the University of Utah, Salt Lake City.

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Figure 2.8 Sample contents using titled sections with Roman numerals. Note the spacing.

second page, it begins 1 inch from the top of the page, and it is not labeled “Table of Contents Continued” (see the Table of Contents in this handbook for a sample). Main headings are followed by a double space in the table of contents; all subheadings are single spaced. The words “Chapters” and “Appendices” are used as referents only, printed once above the list of entries. The word “Chapter” or “Appendix” is not repeated with each entry.

List of Figures / List of Tables

The enumeration continues in sequence; no number appears on pages with main headings (those in all capital letters). A list of tables, a list of figures, a list of symbols, a list of abbreviations, or a glossary may be used. All lists follow the table of contents. The title is placed 2 inches from the top edge of the page in all capital letters: LIST OF TABLES. Following a heading space, the list begins. A list of tables or a list of figures is required if there are 5 to 25 entries. Lists with fewer than 5 entries or more than 25 are not recommended. It is not permissible to combine a list of tables and figures. In a list, the word “Table” or “Figure” should be used as referents only, printed once above the list of entries. The word “Table” or “Figure” is not repeated with each entry (see the List of Figures and List of Tables in this handbook for a sample).

As noted for entries in the table of contents, the listing of tables and figures must agree **exactly** in wording, capitalization, and punctuation with the table title or figure caption. (An exception to this rule occurs if the table title appears in all capital letters on the table itself; table titles in the list of tables are not typed in all capital letters.) Capitalization in lists must be consistent and must agree with what is on the actual page

in the text. Either headline style (the first letter of major words capitalized) or sentence style (the first letter of the first word capitalized) can be used; however, capitalization styles may not be mixed. In the case of long titles or captions, care should be taken to make the first sentence convey the essential description of the item. The first sentence alone then can be used in the list. Long captions may not be summarized.

The table or figure number begins at the left margin. The page on which each table or figure appears is listed at the right margin. As in the table of contents, the page numbers are lined up with each entry by a row of evenly spaced, aligned period leaders. If a table or figure occupies more than one page, only the initial page number is listed. If the title or caption of a table or figure appears on a part-title page preceding the table or figure, the page number in the list refers to the number of the part-title page.

If a list continues to a second page, the second page of text begins 1 inch from the top of the page. The second page is not labeled “List of Tables Continued” or “List of Figures Continued.” Individual entries are single-spaced with a double space between each entry.

If rather than using a list of symbols and abbreviations or a glossary you are introducing terms, symbols, or abbreviations in the text, then always introduce them upon their first occurrence in the document.

Acknowledgments

The enumeration continues in sequence; no number appears on the first page. Acknowledgments are optional. If a preface is used, the acknowledgments are added to the end of the preface without a separate heading. The word ACKNOWLEDGMENTS is

placed 2 inches from the top of the page in all capital letters. Following a heading space, the acknowledgments begin. The text of the acknowledgments must be double-spaced. In the acknowledgments, students may wish to recognize special assistance from committee members, friends, or family members who may have helped in the research, writing, or technical aspects of the thesis or dissertation. Research funding, grants, and/or permission to reprint copyrighted materials should be acknowledged. Individuals employed to prepare the manuscript (typists, editors) are not acknowledged.

Preface

The enumeration continues in sequence; no number appears on the page. This is an optional entry. The word PREFACE is placed 2 inches from the top of the page in all capital letters. Following a heading space, the preface begins. The text of the preface must be double-spaced. A preface includes the reasons for undertaking the study, the methods and design of the researcher, and acknowledgments. Background data and historical or other information essential to the reader's understanding of the subject are placed in the text as an introduction, not in the preface. Theses and dissertations generally do not contain a foreword (i.e., a statement about the work by someone other than the author).

The Text

The text follows the preliminary pages and is numbered with Arabic numerals. Page numbers of the text are in the upper right corner of the page between the top margin and the top edge of the page. The number is placed so that it does not extend into the

right margin. Pages with MAIN HEADINGS (the first page of chapters or titled sections) are counted in sequence with the rest of the text (**beginning with page 1**); however, no number appears on main heading pages. The heading of each chapter or titled section, e.g., INTRODUCTION, CHAPTER 1, CHAPTER 2, is placed 2 inches from the top of the page in all capital letters. Following a heading space, the title for numbered chapters appears in all capital letters. Following another heading space, the text begins. If chapter numbers are not used, a heading space separates the title from the first paragraph of text.

The organization of the text is the responsibility of the student and the supervisory committee and varies by discipline and subject. The text must be well organized and must adhere to standards in the student's field. The text may begin with a separate introduction, or the introduction may form all or a portion of the first chapter or titled section. Text may be divided into chapters, numbered with Roman or Arabic numerals (but not both), each chapter having its own title.

Another option is to divide the text into titled sections. If this option is chosen, the titled section may or may not be numbered. For example, if the text is divided into INTRODUCTION, REVIEW OF LITERATURE, METHODS, RESULTS, and DISCUSSION (or other similar divisions), the INTRODUCTION may be assigned the number "1" and other titled sections numbered sequentially or only the word INTRODUCTION may stand as the section title. Note that such section titles are in all capital letters. See Figure 2.8.

The text must be double-spaced throughout (except for block quotes). No additional space is inserted between paragraphs. All paragraphs must be uniformly indented. Please note that some word processing software will automatically add an extra

space between each paragraph; this feature must be turned off in order for the document to be formatted correctly.

For helpful hints on formatting refer to the **FAQ** on the Thesis Office website.

Parts Composed of Related Chapters

On rare occasions, long manuscripts may be divided into separate parts composed of related chapters. Individual parts may or may not be titled, but they must be numbered. Each part is then preceded by a part-title page (see the Appendices at the end of the handbook). The part number and title (if used) are typed in all capital letters, centered within the thesis margins and between the top and bottom margins of the page. If both part number and title are used, there is a heading space after the number and before the title. The page is counted in sequence with the rest of the manuscript, but no number appears on the page. The chapter number or title of the first titled section of the first part begins on the page following the part-title page 2 inches below the top of the page. The chapters or titled sections, if numbered, are numbered consecutively throughout the text. The numbering does not begin over with new parts. Page numbering is also consecutive.

If part-title pages are used to designate separate parts in a manuscript, they also must be used before each appendix (if used) and before the references (or selected bibliography). Format and numbering are the same as described in the preceding paragraph. When part-title pages are used with appendices and references, the title of each section is not repeated on the following page, and the text begins 1 inch from the top of the page.

If a reprint of a previously published article is incorporated as a chapter, a part-

title page will precede the first page of the reprint. The chapter title is placed on the part-title page. A full credit line (stating “Reprinted with permission from” followed by the source) must be placed on the part-title page. Publishers will frequently require specific wording. See Figure 2.9 for an example.

Quotations

Quotations three lines of print or fewer require double quotation marks. They also must have citation and page numbers listed for them. Quotations longer than three lines of print are indented from the left margin and are single spaced. A quotation blocked in this manner is separated from the text by a double space. Quotation marks are not used with a block quotation unless quotation marks appear within the source quoted. Citation and page numbers must be listed for block quotations.

Headings

Headings establish the organization of the manuscript. There are two types of headings in any manuscript: main headings and subheadings.

Main Headings

Main headings always begin on a new page, are centered, printed in all capital letters, and used for chapters or titled sections (CHAPTER 1, INTRODUCTION), the titles of the preliminary divisions of the paper (ABSTRACT, TABLE OF CONTENTS, LISTS, ACKNOWLEDGMENTS), and other titled sections of the paper (APPENDIX, REFERENCES).

CHAPTER 2

EXPERIMENTAL VERIFICATION OF OPTICALLY OPTIMIZED
CuGaSe₂ TOP CELL FOR IMPROVING
CHALCOPYRITE TANDEMS

EPJ Photovoltaics (2010) **1**, 10601. Experimental Verification of Optically Optimized CuGaSe₂ Top Cell for Improving Chalcopyrite Tandems. M. Schmid, R. Caballero, R. Klenk, J. Krč, T. Rissom, M. Topič, M. Ch. Lux-Steiner, L. © Owned by the authors, published by EDP Sciences, 2010. With kind permission of The European Physical Journal (EPJ).

Figure 2.9 Sample of a part-title page preceding a reprint of a previously published article. Note the copyright permission wording as requested by the publisher.

Placement

Main headings always begin a new page of text and are placed 2 inches down from the top of the page. If the main heading is preceded by the word “CHAPTER” and its numerical designation, the word “CHAPTER” and the Roman or Arabic numeral following it begin 2 inches from the top of the page. After a heading space, the title of the chapter follows. The text begins after a heading space if no subheadings are used. If a subheading follows the main heading, the text begins after a double space.

Spacing

Main headings are always followed by a heading space. Main headings of two or more lines are always double spaced.

Length

Main headings over 4 1/2 inches in length are split and placed on two or more lines with the first line the longest and subsequent lines successively shorter (inverted pyramid form).

Subheadings

Subheadings are used for divisions of the various chapters or titled sections of the manuscript. Subheadings must be used in the same order, levels cannot be skipped (for example, a first-level subheading may not be followed immediately by a third-level subheading), and must be used **consistently throughout** the manuscript. Many students use no more than one or two levels of subheadings. Some, however, require additional

levels.

Unlike main headings, subheadings are not printed in all capital letters. Either a headline style (the first letter of major words capitalized) or sentence style (the first letter of the first word capitalized) capitalization scheme is used for subheadings. Although capitalization schemes may vary across subheading levels, within each level, capitalization schemes must be consistent (for example, all first-level subheadings could be headline style while all second-level subheadings are sentence style).

Additionally, lower-level subheadings must appear visually subordinate to higher levels. Two different subheading levels may not be formatted identically. This can be accomplished visually by emphasizing the subheading differently and by changing the location of the subheading (see Table 2.2). Types of emphasis may be combined (i.e., a heading that is bold and underlined is superior to one that is just bold).

Placement

In order for a freestanding subheading to end the page, there must be room for the heading space preceding it and at least two lines of text following it. If there is not enough room, the subheading moves to the top of the next page. This is the only time a gap in the text is allowed when it is not the end of a chapter.

Spacing

Freestanding subheadings (i.e., all subheadings except paragraph subheadings) are preceded by a heading space and followed by a double space. The spacing before a freestanding subhead is the same as after a main heading. Two or more freestanding

Table 2.2: Subheading subordination.

Level of Subordination	Text Emphasis	Subheading Location
Higher Level	<ul style="list-style-type: none"> • Bold • Underlined • Normal (no emphasis) • Italics 	<ul style="list-style-type: none"> • Centered • Left margin • Paragraph Level
Lower Level		

subheadings in a row are separated by a double space. Paragraph subheadings are preceded by a double space only. (See Appendix A for a comparison of spacing requirements.) Subheadings on two or more lines may have no extra space or a double space between the lines but the spacing must be consistent throughout the manuscript.

Length

Freestanding subheadings over 4 1/2 inches in length are split and placed on two or more lines with the first line the longest and subsequent lines successively shorter (inverted pyramid form). For subheadings placed at the left margin, any subsequent lines are also left justified.

Paragraph subheading

No extra space precedes the paragraph subheading because it is not freestanding. A paragraph subheading is indented the same size space as other paragraphs in the manuscript. Only the first letter of the first word of the paragraph subheading is capitalized. The paragraph subheading is followed by a period, with the text

commencing on the same line. A paragraph subheading is underlined or placed in bold print or italics.

Consistency

It is not necessary to use every level of subheading in every titled section or chapter; however, a subheading level must appear in the same form whenever it is used, and subheadings always must be used in the same order, that is, levels cannot be skipped (for example, a second-level subheading may not be followed by a third-level subheading). The student should first determine the maximum number of subheadings required to establish the pattern of subheadings. Chapters or titled sections with fewer than the maximum number of levels use the early levels of the chosen subheading scheme in the same order as other chapter or titled sections.

Numbering

In some disciplines, subheadings are numbered with a local decimal numbering system. If this system is used, chapters or titled sections must be numbered with Arabic numerals. The first subheading is then numbered 1.1 followed by the title, the second 1.1.1, and so on. If this system is used, all chapters/titled sections and all levels of subheadings must be numbered.

Tables and Figures

A table is a compilation of data in columns or rows (tabular form). A figure is a visual or graphic presentation or illustration. Photographs, maps, diagrams, plates, or

schematic presentations all are figures. Tables and figures must be referred to by number in the text prior to their appearance. The expressions “the following table/figure” or “the table/figure below” may not be used.

Table and figure order

Tables and figures also must be referenced in numerical order (i.e., Table 1, Table 2, Table 3, not Table 1, Table 3, Table 2). Once the table/figure has been referred to, it can be mentioned again out of its numerical order (e.g., it would be perfectly appropriate at this point in the handbook to refer to Figure 2.1 because it has been mentioned previously. It is not appropriate to refer to Figure 2.11, however, because Figure 2.10 has not been mentioned yet). Each table and figure must be mentioned in the text. Each figure or table appears only once; a figure or table cannot be used twice. Refer to previous tables and/or figures if relevant.

Table and figure placement

A large table or figure is placed by itself on the page, centered within the thesis margins. Although it is not necessary for large tables or figures to be centered precisely between the top and bottom margins of the paper, tables and figures should be placed so that they look balanced on the page. Full-page tables or figures must be placed on the page immediately following the textual reference.

The easiest method of dealing with tables or figures is to place them on a separate page without text or, if the textual references occur closely together, to group two or more smaller items together on a page without text. If two or more items are placed on a

page, they must be separated by a heading space. The page then appears after the last item on it has been mentioned in the text. The first item on the page must have been referenced in the text no more than 3 pages prior to its placement.

Tables or figures may appear on a page with text (see Figure 2.10) if (a) they are first referenced in the text; (b) they begin or end the page; and (c) at least six consecutive lines of text accompany the table or figure. A figure or table is never placed in the middle of a page between two paragraphs. In addition, when a table or figure is placed on a page with text, it must be separated from the text by a heading space. A table or figure requiring more than one page may not be placed on a page with text. When a table or figure continues to a second page, the number and the word “continued” are placed above the table or below the figure. On continued tables, column heads should also be repeated.

Alternatively, tables and figures may be placed at the end of the chapter. They are placed in the order in which they are referenced, or they may be grouped: all figures followed by all tables (or vice versa). If this option is selected, it must be used for all chapters. All tables and figures must be referenced in order in the text, and all must have an accompanying title or caption. In other words, a list of titles or captions may not be placed prior to the tables and figures, as is common in some journal submission formats.

Figure numbering and captions

All figures must be numbered consecutively (1, 2, 3 . . .) throughout the manuscript and appendices or numbered locally with decimals (1.1, 1.2 . . . 3.1 . . . A.1) by chapter. If figures are numbered locally with decimals, the main headings of the manuscript must be numbered with Arabic numerals. Figures cannot be numbered by

subsection (within subheadings). The number and caption are placed below the figure within the thesis margins (note that this is different from tables, where the caption is placed above). A figure with parts needs a general caption covering all parts; then an explanation of individual parts follows. Parts must be labeled (a, b, c, d). Figure captions must be in one consistent format throughout the manuscript. All captions for figures must have no space between lines. If there are super- or subscript numbers in the figure captions, however, a double space between lines may be used. All figure captions must be in the same font style and size as the text. Print within a figure may be no smaller than 2 millimeters.

Table numbering and titles

Tables also are numbered consecutively (1, 2, 3 . . .) throughout the manuscript and appendices or numbered locally with decimals (1.1, 1.2 . . . 3.1 . . . A.1) by chapter. Tables cannot be numbered by subsection (within subheadings). The number and title of each table is placed above the table (note that this is different from figures, where the caption is placed below). Table titles may have a double space or no extra space between lines, but the spacing should be consistent throughout the manuscript. The longest line of the title should not exceed the width of the table. One consistent format must be used throughout. All table titles must be in the same font style and size as the text. Table titles are separated from the table by at least a double space. Regardless of the style guide selected, there are solid, horizontal lines spanning the data presented, below the title, after the column headings, and at the end of the table (see Figure 2.11). Generally, vertical lines are not necessary in a table. Tables and figures should not be enclosed in

Table 2.1

Table title

Heading information is enclosed in solid lines.

Data are presented in the body of the table.

Figure 2.11 Sample of a landscaped table. Note how the page number stays in the top right corner, but all other information, table number and table title share the table's landscape direction

thick-lined boxes. Spacing between entries in a table is dependent on the best method of presenting the material. When a table continues to a second page, the table number and the word “continued” are placed above column headers before the table continues. Print within a table may be no smaller than 2 millimeters.

Local numbering

If tables and figures are numbered locally with decimals (i.e., within each main heading), the first table or figure within the first main heading is given the number 1.1, the second 1.2, and so on. If local numbering is used for figures, it also is used for tables. If local numbering is used, the main headings of the manuscript must be numbered with Arabic (1, 2, 3) numerals. Tables or figures in the appendix of a manuscript numbered locally are numbered A.1, A.2, and so on.

Landscape (broadside) placement

Tables and figures may be landscaped or placed broadside (i.e., running the long way on the page) if necessary. In this case, the top of the figure or the table title is placed at the left 1 1/4-inch margin. For a landscaped table or figure, the title or caption is also landscaped (see Figure 2.11) if the title or caption is on the same page as the table or figure. If the title or caption to a full-page landscaped table or figure is on a separate page, however, the title or caption is placed running the width of the page in the usual manner.

Page number placement

Page numbers are placed in the upper right corner on all pages with figures or tables even if the item is placed broadside on the page. Page numbers throughout should be placed in the same position.

Reductions

Tables and figures may be reduced to fit within the thesis margins, but the title or caption must be the same size print as the rest of the manuscript. Print size in a reduced table or figure may be no smaller than 2 millimeters.

Oversize tables and figures

Oversize tables and figures can be reproduced electronically, but the print may not be readable. Therefore, two hard copies of any oversize table or figure are required: one to be submitted to the Thesis Office to be forwarded to Special Collections in the Marriott Library and one that students submit to their departments.

Part-title pages

A long table title or a long figure caption may be placed on a part-title page preceding the item if the table or figure is so large that the caption or title cannot be accommodated on the page. When a part-title page is used, the caption or title begins at or slightly above mid-page (depending on length) and has no space between lines. (A double space between lines may be used if there are super- or subscript numbers in the caption or title.)

If part-title pages are used for titles or captions, the pages are counted and numbered in sequence with the manuscript. Page numbers appear in the upper right corner in the same position as page numbers in the text. The page number that is listed in the List of Tables or List of Figures is the number of the part-title page.

Equations

Format of equations is dictated by the style guide the student is following. Short equations are centered within the thesis margins. All equations are set off from preceding and following text by uniform and consistent spacing (no greater than a heading space).

In general, equations should be numbered at the right margin of the manuscript with the number either in brackets or parentheses. Equations may be numbered consecutively or locally with decimals. If they are locally numbered, the main headings of the manuscript must be numbered with Arabic numerals. Local numbering of equations never exceeds one decimal place (i.e., equations are never numbered according to the number assigned to a subheading). Equation numbers must be aligned with each other throughout the manuscript.

Footnotes and Reference Citations

Whether a student uses a footnote or a reference citation system depends upon the discipline. The format of footnotes or reference citations should adhere to the format specified in the department-approved style manual the student has selected. Footnotes must adhere to the same margins as the rest of the text. Font should be a minimum of 2 millimeters.

If a number reference citation system is employed, numbers in the text may be superscript, in brackets, or in parentheses on the line of text depending on the style guide used. Superscript numbers always are placed outside all punctuation marks; if more than one reference is cited at a time, the numbers are separated by commas (e.g., many^{6,7,10-12} agree with the findings of Einstein.⁴). Numbers in brackets or parentheses on the line of text are placed inside or outside punctuation depending on the style guide followed. A comprehensive reference list in numerical order is placed at the end of the manuscript or if published chapters are used, at the end of each chapter.

Note that the Latin term “et al.” stands for “et alii” (and others). “Et” is not an abbreviation; it is never followed by a period. “Al.,” however, is an abbreviation and is followed by a period. The style guide dictates whether “et al.” is italicized.

Spacing of footnotes and endnotes

Whether footnotes appear at the foot of the pages on which they occur or as notes at the end of each chapter or titled section (endnotes), they must have no space between lines within each entry and a double space between entries. If print quality is clear, having no extra space between entries may be acceptable. Notes at the end of each chapter begin with a new page of text. The word “Notes” or “Endnotes” should appear on the page listing them, 1 inch from the top edge of the page in the same form as other first-level subheadings in the manuscript. No space occurs between lines within each entry and a double space is placed between entries. Notes are not placed at the end of the manuscript. They are more accessible at the end of each chapter or at the foot of the page. In case of error, many notes would have to be renumbered if all were placed at the end of

the manuscript. Notes (endnotes) must be listed in the table of contents as a first-level subheading.

Placement of footnotes

Footnotes placed at the bottom of the page appear in numerical order. If multiple references occur on the same page of text, all the notes referred to must begin on the same page as the reference. In the case of lengthy footnotes, what will not fit above the bottom 1-inch margin should be carried over to the area reserved for footnotes on the following page.

Footnotes are separated from the text by a solid 20-space line. This line does not extend into the left margin. The first line of the note begins a double space below the solid line and is indented the same number of spaces as paragraphs in the text. The numeral is raised above the line and the note is not followed by a period or a space before the note begins (see example at foot of page).¹ Footnote entries have a double or single space between entries.²

The Appendix or Appendices

If used, an appendix follows the text but precedes the references or bibliography. The pages of the appendix are numbered consecutively with the rest of the text. There is considerable flexibility in the kind of material that may be placed in appendices:

¹ Footnote sample. Note the font style is the same as the rest of the text. Note the line above the footnote. The style guide used determines whether the footnote is inside or outside punctuation such as periods, commas, etc.

² Footnote sample.

computer programs, tables of raw data, questionnaires, letters, original historical source material, etc. Each appendix should be sequenced with upper-case letters of the alphabet (APPENDIX A, APPENDIX B). If there is only one appendix, no letter is used; one appendix may or may not have an explanatory title. If there is more than one appendix, each has an explanatory title. The appendix title(s) must be listed in the table of contents in all upper-case letters. Subheadings in an appendix, however, are not listed in the table of contents. Subheadings in an appendix follow the same subheading scheme selected for the text.

The enumeration of any illustrative material (tables, figures, etc.) in the appendix is continuous with the text (e.g., if Table 20 is the last table in the text, the first table in the appendix is Table 21; if local numbering is used in the text, it is also used in appendices). The format and type font used in the appendix must be consistent with the rest of the manuscript. Exceptions are computer programs or similar documents. Consult with the thesis editor if there are questions concerning appendix materials.

Material in the appendix must adhere to the same margin specifications and print size specifications (characters may be no smaller than 2 millimeters) as the rest of the manuscript.

A separate page for the title of each appendix (i.e., part-title page) is often used when diverse, previously printed materials (e.g., computer printouts, letters used in questionnaire surveys, questionnaires, etc.) are included. If a part-title page is used with one appendix, part-title pages must be used with all appendices. The first line of the title (e.g., APPENDIX A) begins at mid-page, centered within the thesis margins. The title of the appendix (e.g., QUESTIONNAIRES) follows after a heading space and is centered

within the thesis margins. The part-title page is counted in sequence with the rest of the manuscript but no number appears on the page. The part-title page is considered the first page of the appendix for the purposes of the table of contents (see appendices herein).

Some departments require submission of a DVD. DVDs may not be submitted electronically because of copyright issues. However, students in departments with this requirement must submit two DVDs: one to the Thesis Office to be forwarded to Special Collections in the Marriott Library and one the student submits to his or her department.

References or Selected Bibliography

The style of the references or selected bibliography must be patterned after the department-approved style guide the student has selected from the list of department-approved journals and manuals of style on The Graduate School website (see also Chapter 3 of this handbook). It is students' responsibility to inform the Thesis Office of which style guide they followed. Failure to indicate which style guide was followed may lead to the student's submission being returned unread. Please also note that software programs, such as EndNote, do not necessarily follow the style guide correctly. It is students' responsibility to make sure that all references are correct according to their selected style guides.

The list of references is placed at the end of the manuscript in numerical or alphabetical order depending upon the system used. Scientific papers usually do not list any material in the references that has not been referenced in the text. The reference section is generally entitled "REFERENCES," or less commonly, "LITERATURE CITED." The references may be placed at the end of each chapter or titled section in

manuscripts composed of a series of articles previously published or accepted for publication. In this case, the subtitle “references” is treated as a first-level subheading.

Writers in the humanities often consult background material that is not directly cited but is included in a bibliography. The compilation of direct and indirect reference material is entitled “SELECTED BIBLIOGRAPHY.”

The first page of the references or selected bibliography begins 2 inches from the top of the page with the main heading typed in all capital letters. A heading space follows. Entries are single-spaced within an entry and double spaced between each entry. The reference section is listed as the last item in the table of contents (unless a vita is used).

If a separate part-title page is used with the reference section, the first reference begins 1 inch below the top of the page and no main heading is used on the page with the references (see “Parts Composed of Related Chapters”).

Citation of Web-accessed Information

Web citations must include name of author, title of publication, and date of publication. These items are formatted according to the style guide selected. In addition, the Uniform Resource Locator (URL) must be provided in the following form:

- protocol or access-mode identifier (i.e., http, https), followed by a colon and two forward slashes (e.g., http://)
- host name, always typed in lower case (e.g., http://www.ieee.org/)
- pathway to the document, including file names, typed exactly as it appears, including upper and lower case and punctuation

- A sample URL is: <http://www.ieee.org/Policy/Submis/Abstract/pabs587.cfm>

URLs may be broken only after a slash or double slash or after a period. Never insert a hyphen, and never break a URL at a hyphen.

Vita

A vita may be included but is not required. If used, it follows the references or selected bibliography and is listed in the table of contents as the last main heading of the manuscript. The author should use a standard short curriculum vita format that includes professionally relevant information such as name, colleges and universities attended, degrees and certificates, professional organizations, positions held, and publications. Do not include personal information such as birthdate, home address, or social security number.

Note that the spelling of the title of this section may be VITA or CURRICULUM VITA. Vitae is incorrect.

CHAPTER 3

DOCUMENTATION STYLE AND WRITING STYLE

Documentation Style

The textual style and documentation of the thesis or dissertation are the student's responsibility and must receive the approval of the student's supervisory committee, subject to the regulations of the Graduate Council. A comprehensive, alphabetical list of department-approved journals the most commonly used manuals of style appears on The Graduate School website. Departmental additions or deletions for this list must be proposed to the thesis editor by the department chair or the director of graduate studies. Changes must be approved by the thesis editor in consultation with the dean of The Graduate School.

The student should pattern citations, references, and other stylistic aspects of the thesis or dissertation after the latest edition of the chosen style manual or recent articles and author instructions from the chosen journal. This handbook, however, should be followed for margin requirements, spacing of text, quotation placement, and presentation of figures and tables. This handbook should be followed in case of any discrepancies. If the student follows the style of a journal selected from the department-approved journals and manuals of style and the Thesis Office does not already have materials from

this journal, the student may be asked to supply a recent article and/or author guide containing examples of a figure, a table, and a reference list.

Writing Style

Because the student writing a thesis or dissertation is presenting the results of research primarily for other scholars within the academic community, the style should be formal rather than colloquial. The tone of the thesis or dissertation should be serious; in general, a conversational writing style is not appropriate. Despite a lack of particular knowledge about a field, an intelligent reader of a thesis or dissertation should be able to understand terminology and the discussion of research. Jargon must be avoided because it obscures rather than clarifies the topic.

For hyphenation and spelling, the current editions of Webster's New Collegiate Dictionary and Webster's Third New International Dictionary are standard sources. In general, American English does not hyphenate prefixes. The Thesis Office follows American English hyphenation and spelling rules. Punctuation, capitalization, and the rules of grammar can be found in any basic grammar book. For matters of English usage, the best source is R.W. Burchfield's Fowler's Modern English Usage (2004).

All currently enrolled University of Utah graduate students have access to a Grammarly premium subscription for free. It is highly recommend that Grammarly be used for all University writing assignments and all drafts of the thesis or dissertation.

CHAPTER 4

PREPARATION AND SUBMISSION OF THE MANUSCRIPT

Print Quality

The same size and style of print must be used throughout the manuscript. Characters must be clear and sharp. Illegible, indistinct, or blurred letters are not acceptable. Standard print size (10 or 12) must be used. Some font styles in 10, however, may be too small. (ProQuest requires a minimum of 2 millimeters for print.) The Graduate School requires clear, legible print. The thesis editor should be consulted regarding unusually small or large print.) Font size must not affect accepted spacing of major headings and subheadings. See Table 4.1 for recommended fonts and print sizes.

The right margin of the manuscript may be justified if the spacing between words is not unusually large, if words are properly hyphenated, and if the right margin is justified on every full line of text, including footnotes and references.

No prepackaged computer program completely adheres to the University of Utah Graduate School thesis guidelines. The Knowledge Commons in the Marriott Library is an excellent resource for computer questions:

(<http://www.lib.utah.edu/services/knowledge-commons> / 801-581-8558).

Color should be used only where necessary.

Table 4.1 Recommended fonts and print sizes. Each font is in the style indicated.

Arial	10 pt. or 12 pt.
Century	11 pt. or 12 pt.
Garamond	12 pt.
Georgia	11 pt.
Microsoft Sans Serif	10 pt. or 12 pt.
Tahoma	10 pt.
Times New Roman	12 pt.
Trebuchet MS	10 pt. or 12 pt.
Verdana	10 pt.

Adapted from: ProQuest/UMI Gradworks Guide F2006

Margins

All pages of the final manuscript must be within the following limits:

left and right margins: 1 1/4 inches
top and bottom margins: 1 inch
main headings pages, top: 2 inches

Pages of text must be of consistent length. Pages with full-page tables and figures will vary in length depending upon the amount of data displayed in the table or the size of the figure. Pages of text with a small table or figure beginning or ending the page must be the same length as pages of straight text. Because freestanding subheadings must be followed by at least two lines of text, the bottom margin may vary slightly on pages with freestanding subheadings. At least two lines of text must be placed on the last page of any titled section/chapter of the manuscript. If a chapter ends with only one line of text on a page, a line from the preceding page must be moved to the last page. Pages of text must be of consistent length and should always go to the 1-inch bottom margin. There are only

three circumstances where white space on the bottom of the page is permitted:

- **Only tables or figures appear on the page:** Pages with full-page tables and figures will vary in length depending upon the amount of data displayed in the table or the size of the figure. The table or figure should be centered on the page so the white space above and below is roughly equal. Pages of text with a small table or figure beginning or ending the page must go to the 1-inch margin. It is also inappropriate to have more than a heading space between the text and the table or figure.
- **To avoid leaving a subheading at the bottom of the page:** Because freestanding subheadings must be followed by at least two lines of text, the bottom margin may vary slightly on pages with freestanding subheadings. At least two lines of text must be placed on the last page of any titled section/chapter of the manuscript.
- **The end of the chapter:** Large white space is permitted at the end of the chapter depending on the length of the remaining text. If a chapter ends with only one line of text on a page, a line from the preceding page must be moved to the last page.

Electronic Version Submitted for Thesis Release

After all corrections marked on the manuscript have been made and the Thesis Office issues a Format Approval, the student uploads the digital version according to ProQuest/UMI instructions. After the student receives notification the electronic thesis or dissertation has been approved, the student may verify graduation status through the Campus Information System (CIS).

Distribution of Theses and Dissertations

Theses and dissertations are available in electronic and microform formats through traditional publishing with ProQuest/UMI. With the student's permission, they are also available openly through USpace, the University of Utah's institutional repository. Items in USpace are indexed by Google. Each document in USpace receives a unique URL for easy linking and sharing.

Hard copies of all theses and dissertations are housed in the Archives of the Marriott Library. The Archives' hard copy is produced by the Library, with no charge to the student.

An abstract of each thesis or dissertation is filed according to department in University of Utah Abstracts of Theses and Dissertations, available in Special Collections in the Marriott Library.

Fees

There is no fee for traditional electronic publishing through ProQuest/UMI. The fee for registration of a claim for copyright through ProQuest/UMI is \$55.00. Open access publishing for University of Utah theses and dissertations is provided at no charge through USpace.

APPENDIX A

COMPARISON OF SPACING REQUIREMENTS

Heading Space ³	Double Space ⁴	Single Space ⁵
<ul style="list-style-type: none"> • after main headings • before all freestanding subheadings • before and after equations • between text and a figure or table that precedes or follows text AND between two or more figures or tables on a page without text (heading space is the minimum allowed in the latter case) 	<ul style="list-style-type: none"> • between lines of text • after all freestanding subheadings • before paragraph subheadings • before and after single-spaced block quotes • between entries in lists of tables and figures and in references • before and after main headings in the table of contents 	<ul style="list-style-type: none"> • within entries in lists of figures and tables • within entries in reference lists • between lines in block quotes • between subheadings in table of contents • between lines in figure captions and table titles (double spaces may be used if there are super- or subscript numbers in caption or title)

¹ Heading space is approximately equivalent to two blank lines between lines of text. The spacing chosen must be consistent throughout.

² Double space is approximately equivalent to one blank line between lines of text. The Space chose must be consistent throughout.

³ Single space is equivalent to no extra spacing between lines.

APPENDIX B

USING PUBLISHED ARTICLES AS
DISSERTATION CHAPTERS

Previously Published, Accepted, and Submitted

Articles as Chapters of a Dissertation

1. The dissertation (final product) looks like any other dissertation. In other words, it has the same component parts and the same format as any other dissertation.
2. Each previously published reprint and accepted or submitted article (or chapter as an article prepared for publication) is treated as a separate chapter.
3. The dissertation must have a general abstract that covers all components. A general introduction and general conclusion are recommended.
4. If a dissertation incorporating previously published articles as chapters is selected, references should be placed at the end of each chapter—not at the end of the manuscript. Each set of references may follow a different style guide, depending on the journal in which the chapter is published or will be published.
5. Reprints are acceptable. However, some departments require that previously published articles be reformatted to match all other chapters.
6. The reprints are accepted as they are except they must be single-sided copy only, must fit within the thesis margins, and must be numbered consecutively with the rest of the text. All other chapters (whether accepted, submitted, or in preparation) must fit University of Utah guidelines, as specified in the handbook (margins, subheadings, figure and table placement, etc.).
7. In the List of Figures and List of Tables, figures and tables from reprints are treated as if they are numbered with respect to the rest of the text. A local, decimal numbering scheme must be used. For example, in the List of Figures, the first figure in Chapter 5, which is a reprint, is listed as 5.1.

8. The requirement that all print be at least 2 mm does not apply to reprints.
9. Copyright issues frequently arise with previously published material. Students need to obtain permission to duplicate copyrighted material (and, possibly, multiple author releases).
10. As for any other thesis or dissertation, students are urged to submit their manuscripts prior to the defense for a preliminary review.
11. A full credit line (stating “Reprinted with permission from” followed by the source) must be placed on the part-title page preceding a reprint or as a footnote on the first page of a chapter that contains a previously published article that has been reformatted to match all other chapters.