A Study Into The Fundamentals and Enhancements Of Solenoid Based Accelerators

by

William Poole

A Thesis Submitted in Partial Fulfillment

of the Requirements for a Degree with Honors

(Electrical Engineering)

The Honors College

University of Maine

052023

Advisory Committee:

David Kotecki, Associate Professor

Nuri Emanetoglu, Associate Professor

Reinaldo Tonkoski, Professor

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*(This page is optional. You can use the U.S. Copyright Office’s* [*web portal*](https://www.copyright.gov/registration/) *to register.)*

ABSTRACT

The abstract is a 100–300-word summary of your thesis. This page is mandatory. The heading “ABSTRACT,” like other top-level headings in the document, must be triple-spaced, centered, in all capital letters. The body of the section (the part you are reading) must be double-spaced.

Along with the title and copyright pages, the abstract page *is counted* in page numbering but *does not* include a written page number. These preliminary pages are numbered in Roman numerals (along with the dedication, acknowledgments, preface/foreword, table of contents, and lists of figures/tables/definitions—if applicable).

Be sure the document never contains extra spacing before or after paragraphs. To be safe, use [Ctrl] + [A] (Windows) or [Cmd] + [A] (Mac) to select all the text in the document, then either (a) open the Line Spacing Options and set the “Before” and “After” spacing to 0pt, or (b) in the Line Spacing dropdown, use “Remove Space Before Paragraph” and “Remove Space After Paragraph.”

All of the text in the headings and body of your thesis must be black, 12-point, Times New Roman font. Footnotes and captions for figures and tables are the only exceptions. They can be either 10- or 12-point font, at your discretion. The document must use left margins of 1.5”, with right, top, and bottom margins of 1”.

DEDICATION

If you would like to include a dedication, you can write it here. This section is optional. This would be the first page with a written page number. For these early pages, page numbering must use a lowercase Roman numeral, counting the title, copyright, and abstract pages. All page numbers must be 12-point Times New Roman, centered in the footer.

ACKNOWLEDGEMENTS

An acknowledgments page is optional but recommended. This is a place to thank anyone who helped you and your project get where you are. Like with the dedication page, include a lowercase Roman numeral page number, with page numbering starting on the title page.

PREFACE OR FORWARD

If you would like to include a preface or forward, you can write it here. This section is optional. Like the dedication and acknowledgements pages, include a lowercase Roman numeral page number starting with the correct number.

TABLE OF CONTENTS

This section is mandatory. The table of contents is a list of all major chapters or sections (all top-level headings), not including pages numbered with Roman numerals. You may include second- or third-level subheadings at your discretion.

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LIST OF FIGURES/TABLES/DEFINITIONS

A list of figures and/or a list of tables is mandatory if your thesis includes figures and tables. If it includes both, you may separate or combine the list of figures and the list of tables. For instance, it is common to include both a list of figures and a list of tables. But it is also common to only include a list of figures, counting tables as figures.

A list of definitions is optional but recommended for theses with more obscure language. Entries must be double-spaced with no bold, but other formatting is left to your discretion.

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*(Remove table borders or change them to white.)*

# BEFORE YOU START

This template is meant to serve as a guide to the University of Maine (UMaine) Honors College thesis formatting guidelines. Like many academic works, you can read it in order, but you may also skim and skip to sections that feel most relevant. However, please note that in order to graduate, your written thesis must meet all formatting guidelines. Manuscripts that do not fully comply will not be eligible for online publication. If you have any questions after reading this guide, see the formatting checklist on the Honors College website (also included in this document as an appendix): [honors.umaine.edu/resource/honors-thesis-format-template/](https://honors.umaine.edu/resource/honors-thesis-format-template/). You may also contact the Honors College at [honors@maine.edu](mailto:honors@maine.edu) for further details.

All Honors theses are stored digitally in permanent record by the Honors College. If your thesis is correctly formatted and you would like it published online, it will be uploaded to the Digital Commons, UMaine’s public research archive: [digitalcommons.library.umaine.edu/honors/](https://digitalcommons.library.umaine.edu/honors/).

You are encouraged to search the Digital Commons for inspiration from past Honors theses. However, please note that while past copies of UMaine Honors theses may provide ideas for possible topics or approaches, rules may have changed or specific exceptions approved. Again, manuscripts that do not fully comply with the most up-to-date guidelines will not be published on the Digital Commons.

Note that, the semester this was written, almost all theses submitted required significant changes to match the formatting guidelines. The editing process can easily stretch into an extended back-and-forth. To avoid extra strain on yourself and the Honors College throughout May and June, we strongly encourage you to start with correct formatting from the beginning. While early drafts may be written in Google Docs or LibreOffice, please note these programs are not compatible with key guidelines. All UMaine students have free access to Microsoft Office, accessible here: <https://umaine.edu/it/microsoft-office365/>.

It is often simplest to copy-and-paste content produced with other programs into this template, gradually making it your own document as you work.

# FORMATTING THE THESIS

All final thesis copies are required to include a properly formatted title page, abstract page, table of contents, bibliography, any appropriate IRB or IACUC approval letters, and an author’s biography.

Figure 1. Thesis Organization.

|  |
| --- |
| Title page *(required)*  Copyright page  Abstract *(required)*  Dedication  Acknowledgements  Preface or Foreword  Table of Contents *(required)*  List of Tables, Figures, Definitions *(required if applicable)*  Text of Manuscript (may include sections such as Introduction, Literature Review, Methodology, Results, Discussion, Conclusion) or Disquisition  Appendix—or Appendices, if multiple *(required if applicable)*  Approval Letter from the IRB (Institutional Review Board for the Protection of Human Subjects) and/or the IACUC (Institutional Animal Care and Use Committee) *(required if applicable)*  Author’s Biography *(required)* |

Each page of the thesis must be formatted to fit on 8.5- by 11-inch paper and adhere to all the formatting requirements discussed in this guide.

The Honors College is concerned with the organization, neatness, mechanical correctness, and consistency of all final thesis submissions. Requests to deviate from thesis formatting requirements must be approved by the college beforehand.

## Required Sections

### Title Page

All final thesis submissions must include a properly-formatted title page. Please see the title page of this document as a template.

* All the text must be 12-point Times New Roman font.
* Title:
  + Must be in ALL CAPS, double spaced.
  + Ensure that “by” is lowercase.
* Spacing:
  + Single space “A Thesis Submitted in Partial Fulfillment” followed by “of the Requirements for a Degree with Honors” followed by “(Your Major(s)).”
  + Double space “The Honors College” followed by “University of Maine” followed by “Month of Graduation, Year.”
  + Single space “Advisory Committee” and the list of committee members, with committee members indented by 0.5 inches.
* The Advisory Committee section must be at the very bottom of the page. It must include the name and title of all committee members, with the advisor listed first, then listed alphabetized by last name

It is important to check with your committee members to determine how they would like their titles to be listed on your thesis.

### Abstract

Initial research into coilgun projects determined that they have a common issue of low efficiency and design complexity. This research aims to cover the topics of solenoid applications, magnetic fields, wires properties, and more for specific task optimization. There are many factors that come into the design and operation of solenoids which make them complicated to utilize effectively. These points will be combined for the overall system aspects dependent on application. These applications can be steady state for solenoid valves, high force for coil guns, and response time for chemistry applications. Coilguns have been studied for their unique ability to accelerate an object without adding weight or manipulating their design to allow for launches by alternative means. This advantage is purposely exploited for either a satellite launcher or another projectile accelerator. To get this data and review its interpretation my Honor’s Thesis committee shall be utilized. To prove some of this data, the ECE capstone project coilgun will use these concepts to enhance its optimization.

An abstract—a clearly written, concise summary of your thesis—must be included in the final document. The abstract must address the purpose, scope, methodology and results of the thesis. You can find examples from past semesters on the Digital Commons: [digitalcommons.library.umaine.edu/honors/](https://digitalcommons.library.umaine.edu/honors/).

### Table of Contents/List of Figures

Each thesis must contain a table of contents and a list of figures (if appropriate). The table of contents must be double-spaced, with 12-point Times New Roman font. At bare minimum, the table of contents must include the following:

* Chapter Headings or Titles
* First Level Subheadings
* Bibliography
* Appendix or Appendices (if applicable)
* Author’s Biography

Second and third level heading may be included at the discretion of the author. The table of contents should not list any of the preliminary pages (numbered with Roman numerals).

The table of contents may be formatted using the table of contents tool in newer versions of Microsoft Word. Note that steps 1 through 4 have already been done for this template:

1. Pick any properly-formatted top-level heading in the document.
2. Locate the Styles Pane at the top of the screen, then right-click Heading 1 and select “Update Heading 1 to Match Selection.”
3. If you would like to include first- and second-level subheadings in your table of contents, then repeat steps (1) and (2) using Heading 2 for first-level subheadings and Heading 3 for second-level subheadings.
4. On the page where you want your table of contents:
   1. Place your cursor at the start of the page.
   2. In the top bar of Word, navigate to the References pane.
   3. Click the Table of Contents dropdown (on MacOS: on the left).
   4. Select “Custom Table of Contents” at the bottom of the menu.
   5. Confirm the format “From template” is selected, then click OK. This will create a table of contents. Ensure the heading is centered, tripled-spaced, in all capital letters.
5. When you need to update the table of contents, right click on it anywhere and select “Update Field.”

Other examples are provided below.

Figure 2. Table of contents example 1, using typed periods

|  |
| --- |
| Chapter or Section Heading1………………………………………………………….1  First Level Heading2……………………………………………………………….3  Second Level Headings3…………………………………………………….….6  Chapter or Section Heading4………………………………………………………….9  First Level Heading5……………………………………………………………….12 |

Figure 2. Table of contents example 2, using a table\*\*

|  |  |
| --- | --- |
| Chapter or Section Heading1 | 1 |
| First Level Heading2 | 3 |
| Second Level Headings3 | 6 |
| Chapter or Section Heading4 | 9 |
| First Level Heading5 | 12 |

*(\*\*When finalized, the table border should be made invisible.)*

### Author’s Biography

The author’s biography is an opportunity to tell your readers more about yourself. These are short (usually no more than two paragraphs) and written in third person. Common things to mention include hobbies, student activities, and future plans.

## Fonts, Margins, and Spacing

### Font Style

The font must be consistent throughout the thesis. All final thesis submissions must use 12-point, Times New Roman, black font. This includes the thesis text, preliminary pages (title page, abstract, etc.), tables, bibliography entries, and appendix text. Remember to force active HTML links to show in black and to confirm that page numbers also use 12-point, black, Times New Roman font.

Exceptions: Footnotes, endnotes, and captions may use 10-point Times New Roman. Text in figures or the appendix that comes from another source (e.g., reprint of government documents, letter of consent, etc.) may be in another font.

### Margins

Margins must be 1.5” on the left and 1” on the right, top, and bottom. Please ensure that all footnotes, charts, graphs, figures, tables, and photographs adhere to the prescribed margins. Only page numbers are allowed within the 1-inch bottom margin.

### Spacing

The body of the thesis must be double-spaced. Captions, footnotes, the bibliography (or list of references / works cited), and data within tables must be single-spaced. Entries in the bibliography / list of references / works cited must be separated by an empty line. Lengthy descriptions in the appendix may be single-spaced at the author’s discretion. Any quotations longer than 4 lines must be single-spaced and indented.

The text must be formatted to avoid widowed and orphaned lines. A *widowed* line is a paragraph-ending line that falls at the beginning of the following page/column, thus separated from the remainder of the text. An *orphaned* line is a paragraph-opening line that appears by itself at the bottom of a page/column. Be sure the document never contains extra spacing before or after paragraphs. To be safe, use [Ctrl] + [A] (Windows) or [Cmd] + [A] (Mac) to select all the text in the document, then either (a) open the Line Spacing Options and set the “Before” and “After” spacing to 0pt, or (b) open the Line Spacing dropdown and use “Remove Space Before Paragraph” and “Remove Space After Paragraph.”

## Pagination

A page number must appear on every page, with the exception of the first few preliminary pages: the title, copyright, and abstract pages. These pages are counted in page numbering, but a written page number does not appear. All preliminary pages (dedication, table of contents, list of figures, etc.) must be numbered with Roman numerals. The rest of the thesis must use Arabic numerals (1, 2, 3, …). Regardless of the number of preliminary pages, the first page of Arabic numbering is counted as page 1.

Page numbers must be placed in the bottom center and use 12-point, Times New Roman font. No other information (name, thesis title, date, etc.) may appear in the footer.

The following links include an Honors-specific overview and demo of how to format your thesis and set up pagination:

|  |  |
| --- | --- |
| <https://youtu.be/B8hSifH3HMc> | <https://youtu.be/24PMlpKpFrk> |

Figure 4. Pagination Required for Thesis

|  |  |  |
| --- | --- | --- |
| Preliminary Pages | | |
| **Title Page**  **(Required)** |  | Page is counted, **number NOT typed on the page.** |
| **Copyright Page**  **(Optional)** |  | Page is counted, **number NOT typed on the page.** |
| **Abstract**  **(Required)** |  | Page is counted, **number NOT typed on the page.** |
| **Dedication/Preface**  **(Optional)** | lower case Roman numeral | Page is counted, number typed on page.  Continue numbering from previous section. |
| **Acknowledgements**  **(Optional)** | lower case Roman numeral | Page is counted, number typed on page.  Continue numbering from previous section. |
| **Preface or Foreword**  **(Optional)** | lower case Roman numeral | Page is counted, number typed on page.  Continue numbering from previous section. |
| **Table of Contents**  **(Required)** | lower case Roman numeral | Page is counted, number typed on page.  Continue numbering from previous section. |
| **List of Figures, Tables Definitions**  **(Required if any)** | lower case Roman numeral | Page is counted, number typed on page.  Continue numbering from previous section. |
| Body Pages | | |
| **Text of manuscript** | Arabic numerals | Page is counted, number typed on page.  **Must begin with page 1.** |
| **Bibliography**  **(Required)** | Arabic numerals | Page is counted, number typed on page.  Continue numbering from previous section. |
| **Appendix(ces)**  **(If any)** | Arabic numerals | Page is counted, number typed on page.  Continue numbering from previous section. |
| **Author’s Biography**  **(Required)** | Arabic numerals | Page is counted, number typed on page.  Continue numbering from previous section. |

# THESIS HEADINGS

Headings represent the major divisions and subdivisions of the thesis. Top-level headings, which mark major chapters or sections (abstract, introduction, author’s biography, etc.), must be triple-spaced, centered, and fully capitalized (with no bold). To triple space properly, place your cursor somewhere in the chapter/section heading, open the Line Spacing dropdown, and selecting 3.0 spacing. Please consult with the Honors College before using a different style.

Figure 5. Heading and subheading format

|  |
| --- |
| CHAPTER I *(optional)*  CHAPTER TITLE  First-Level Subheadings  First-level subheadings are centered and underlined. Text should be indented directly beneath each heading.  Second-Level Subheadings  Second-level subheadings are left-aligned and underlined. Text should be indented directly beneath each heading.  Third-Level Subheadings. Third-level subheadings are left-aligned, indented, underlined, and followed by a period. Text should come immediately after the subheading. |

It is permissible to have a division entitled INTRODUCTION before beginning the first numbered chapter. For theses not organized into chapters (e.g., science theses divided into results, discussion, conclusion, etc.), the title of the section may take the place of a chapter title. Each chapter or top-level section must start on a new page.

Figure 6. Heading and subheading example with text

|  |
| --- |
| READING LISTS  The Reading List  The Reading List is a unique aspect of our thesis process. We believe it distinguishes the Honors College at the University of Maine from other Honors programs and colleges. It also differentiates our defenses from master’s or doctoral defenses. Therefore, while the reading list is not part of the written thesis, it is an important and required aspect of the thesis defense.  Books Before College  Works you read before college may be included in your Reading List.  There is often one or two texts that contributed greatly to your intellectual development. However, these must not make up the bulk of your Reading List entries.  Works from Honors  It is common to include 2-4 texts from the Honors Civilizations or Flourish sequences, as long as your Reading List is not be composed primarily of Honors texts. If there are no texts from Honors sequences you would like to include, that is also fine. Just expect to be asked, “Why not?” You may have a very good reason, and that is fine  Examples of Reading Lists. Students often ask for examples of past reading lists. Though each Reading List is unique, we have selected a few representative samples. You may find an example of both a narrative and annotated Reading List here: [honors.umaine.edu/current-students/academics/thesis/reading-lists/](https://honors.umaine.edu/current-students/academics/thesis/reading-lists/). |

Subheadings do not need to start on a new page (this is discouraged). However, note that the widowed line rule also applies to headings. (A heading must not appear at the bottom of a page if its text begins on the next page.)

# OTHER ASPECTS

## Footnotes, Endnotes, or Chapter Notes

Footnotes or endnotes should be consistently formatted following a standard style manual. They must be single-spaced, 10-point Times New Roman, adhering to the margins.

The Honors College generally prefers footnotes to endnotes. Footnotes are placed at the bottom of the page where they appear. Endnotes appear either at the end of the thesis or at the end of each chapter (chapter notes).

If placed at the end of the thesis, endnotes must appear before the bibliography and be entered in the table of contents. If placed at the end of each chapter, chapter notes must start on a new page.

Footnotes, along with endnotes listed at the end of a thesis, must be numbered consecutively throughout the thesis. if using chapter notes consecutively through the chapter.

Both footnotes and endnotes may be created in newer versions of Microsoft Word using tools in the References pane of the top menu.

## Charts, Graphs, Tables, Figures, and Photographs

Illustrative materials may be interspersed throughout the thesis or included in an appendix, at the discretion of the author. All illustrative material must adhere to the margin and font specifications and must be reader friendly. If an illustrative material must be hand-drawn or hand-lettered it must be scanned and inserted electronically into the final thesis document.

If inserted within the text of the thesis, the illustrative material must fit on one page if possible. For example, a table may not start at the bottom of p. 15 and continue onto p. 16 if it could fit on one page by itself. If a table is too long to fit on one page, it can be spread over multiple pages by repeating the header columns on each page and ensuring it is clear on each page that is a continuation of the same table.

Pages must remain in vertical, portrait orientation. If a figure does not fit on a page, do not rotate the page orientation. Instead, rotate the figure itself, placing the bottom of the figure towards the right side of the page.

If a thesis contains any figures, graphs, tables, photographs, or charts, then a separate list of figures (or graphs/tables/charts) is required and must be inserted after the table of contents. At your discretion, you may separate these into multiple lists (list of figures, list of tables, etc.) or combine them as a single list of figures. Each list should use the same style as the table of contents, providing the title and page number of each figure. Within the body of the document, each figure, chart, graph, or table must be numbered and captioned (caption must be 10-point, Times New Roman font). The caption must appear on the same page as the illustrative material it references.

## References

Every thesis must include a bibliography (or works cited / list of references) regardless of the citation style used throughout the thesis. The full publication details for all sources cited in the thesis, or, for some disciplines, all sources that informed the development of your thesis, must be included in the bibliography. The layout and title (works cited, references, etc.) of this list will vary by discipline. Like other top-level headers, the title must be centered, tripled-spaced, and fully capitalized.

Entries should follow a standard style manual appropriate to the discipline. However, the Honors College prefers citation styles that include the title of each work. Regardless of the style you use, entries must be single-spaced, separated by an empty line between each entry.

## Appendices

Following the bibliography, the appendix (or appendices) includes supplemental materials such as original data, charts, tables, photographs, etc. that you prefer not to include in the body of the thesis. This material may be combined in one appendix (listed in the table of contents as simply “appendix”) or divided into multiple appendices.

If a thesis contains two or more appendices, they must be preceded by an appendix title page, then labelled as Appendix A, Appendix B, and so on. The title page simply includes the word “appendices” in the center of the page, written in all capital letters. It must also be included in the table of contents. Each appendix must also be listed in the table of contents. Their headings must be centered, triple-spaced, in all capital letters. They are usually double-spaced, but you may single-space some of the material at your discretion

### Human Subjects

Any Honors College student whose research involves human subjects must submit their research protocol to the University of Maine Institutional Review Board (IRB) and receive written approval *prior* to starting any activities related to human subjects. This includes, but is not limited to, research involving surveys, questionnaires, oral histories, and interviews, whether conducted in person, over the phone, or by mail.

Conducting research involving human subjects without IRB approval violates UMaine policy. Theses involving human subjects research will not be accepted by the Honors College without proof of IRB approval. **A copy of the IRB approval letter must be included as its own appendix.**

### Animal Research

Any Honors College student whose research involves vertebrate animals must submit their research protocol to the University of Maine Institutional Animal Care and Use Committee (IACUC) and receive written approval *prior* to starting any activities related to human subjects.

Conducting research involving vertebrate animals without IACUC approval violates UMaine policy. Theses that involve vertebrate animals will not be accepted by the Honors College without proof of IACUC approval. **A copy of the first page of the IACUC approval letter (containing the approval number) must be included as its own appendix.**

# FINAL STEPS

## Submitting Your Thesis

When your written thesis is complete and fully formatted, you can submit it to the Honors College by emailing [honors@maine.edu](mailto:honors@maine.edu). Include both a PDF and a Word document, and use a subject line that starts with [Thesis Submission] to keep the email visible.

After you submit your documents, someone will review them against the formatting guidelines and reply with any changes that need to be made. The semester this was written, almost all theses submitted required at least two or three edits. These changes need to be *completed by the submission deadline*, and it often takes one or two days to receive formatting feedback. In order to leave time for multiple rounds of editing, please plan to submit your thesis at least one week in advance of the deadline.

Please note that, though programs like Google Docs can be convenient for early drafts, some formatting requirements are *not supported*, so we cannot accept a google Doc as a final thesis. Final formatting must be done in Microsoft Word or a markup language like TeX. Note that all UMaine students have free access to Microsoft Office at [umaine.edu/it/microsoft-office365/](https://umaine.edu/it/microsoft-office365/).

## Publication on the Digital Commons

If you would like, the Honors College can publish your thesis online to the Digital Commons, UMaine’s official research repository hosted by Fogler Library. Please coordinate with your advisor to choose search keywords, an email address for periodic readership reports (optional), and any disciplinary collections you would like your thesis included in. Your advisor will submit these details with Thesis Form 7. You may find a complete list of disciplinary collections here: [digitalcommons.library.umaine.edu/assets/taxonomy.pdf](https://digitalcommons.library.umaine.edu/assets/taxonomy.pdf). All previously published Honors theses can be viewed online here: [digitalcommons.library.umaine.edu/honors/](https://digitalcommons.library.umaine.edu/honors/).

You may also choose to place your thesis under embargo or opt out of online publication. In this case, the Honors College will store your thesis in a private archive. If you choose to place your thesis under embargo, the Honors College will publish it to the Digital Commons after the date you and your advisor pick.

The Honors College will publish the thesis of any student who seeks publication and follows all formatting guidelines listed in this document. **Honors theses that do not meet the outlined formatting criteria will not be published online.**

# APPENDICES

# APPENDIX A: SAMPLE AUTHOR’S BIOGRAPHY

Leslie S. Donne was born in Orono, Maine on April 1, 1988.  She was raised in Cleveland, Ohio and graduated from Heights High School in 2006.  Majoring in anthropology, Leslie has minors in mathematics and education.  She is a member of Phi Beta Kappa, Chi Pi Sigma, and Nu Epsilon Eta.  She has received a Margaret Chase Smith Scholarship and an Honors College Thesis Fellowship.

Upon graduation, Leslie plans to study on a Fulbright Grant in Sweden before returning to work on an advanced degree in the history and philosophy of science.

# APPENDIX B: SAMPLE REFERENCE LIST

Andrade, Chittaranjan. “How to Write a Good Abstract for a Scientific Paper or Conference Presentation.” *Indian Journal of Psychiatry*, vol. 53,2 (2011): 172-5. doi:10.4103/0019-5545.92558

“Honors Thesis Formatting Workshop - Part 1 (Overview Presentation).” *YouTube*, UMaine Honors College, 26 Mar. 2020, https://www.youtube.com/watch?v=24PMlpKpFrk. Accessed 10 May 2022.

“Honors Thesis Formatting Workshop - Part 2: Demos (Margins, Pagination, and Table of Contents).” *YouTube*, UMaine Honors College, 26 Mar. 2020, https://www.youtube.com/watch?v=B8hSifH3HMc. Accessed 10 May 2022.

“Maine Day Meal Pack-Out.” *Our UMaine - Maine Day Meal Pack-Out*, University of Maine Foundation, https://our.umaine.edu/s/300/13-ORONO/foundation/17crowd/interior.aspx?sid=300&gid=13&pgid=1768.

*Reading Lists*, The University of Maine Honors College, https://honors.umaine.edu/current-students/academics/thesis/reading-lists/.

*Thesis Forms, Templates, Guides, & Rubrics*, The University of Maine Honors College, https://honors.umaine.edu/current-students/academics/thesis/forms/.

# APPENDIX C: HONORS THESIS FINAL FORMATTING CHECKLIST

TITLE PAGE  
□ Title is in ALL CAPS, double spaced

□ Ensure that “by” is lowercase

□ Advisory Committee section is single spaced

□ Committee members listed with Advisor(s) first, then alphabetized by last name

□ All titles are verified to be correct  
□ Lines below “Advisory Committee” are indented  
□ Advisory Committee section is at the very bottom of the page

MARGINS  
□ Left: 1.5" and Right, Top, and Bottom: 1"

FONT

□ Times New Roman, 12-point

□ ONLY Exception: size for captions & footnotes - Times New Roman, 10 point

□ All text is in black, including any links (must force to hyperlinks to appear in black)

□ ONLY Exception: text that appears in a figure, is from an outside source, etc.

SPACING

□ Single space only the following items:

□ Advisory committee (section on title page)  
□ “A Thesis Submitted...” (section on title page)

□ Footnotes  
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□ **Abstract**□ Dedication/Preface  
□ Acknowledgements

□ Preface or Foreword  
□ **Table of Contents**□ List of Figures, Tables, Definitions (**mandatory,** if applicable)

□ **Text of Manuscript**□ **Bibliography**□ Appendix or Appendices, if multiple (**mandatory,** if applicable)

□ **Author’s Biography**

PAGINATION

□ No page numbers

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□ Small Roman Numerals (ex: i, ii, iii)

□ Count every page of the document, but only start displaying numeral at first page after the abstract (ex., no numbers shown on title page [i], copyright [ii], and abstract page [iii], then other preliminary pages start with iv)

□ Dedication/Preface

□ Acknowledgments  
□ Preface/Foreword  
□ Table of Contents  
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□ Heading of each Chapter or Section Heading is ALL CAPS, centered, triple space underneath

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# AUTHOR’S BIOGRAPHY

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*(See Appendix A for a more concrete example)*