

**Print copies are available from the URO upon request**

**2009-2010**

**SENIOR THESIS FORMAT MANUAL**

**FOR**

**DEGREE WITH DISTINCTION AND  
HONORS DEGREE WITH DISTINCTION CANDIDATES**

**UNIVERSITY OF DELAWARE**

**UNDERGRADUATE RESEARCH PROGRAM**

**The requirements published herein are effective for students submitting theses for Spring 2010, Summer 2010, Fall 2010, and Winter 2011 degree conferral.**

## PREFACE

This *Senior Thesis Format Manual* will help you prepare a thesis that meets the format requirements set by the University Honors Program and University Committee on Student and Faculty Honors (UCSFH). The Undergraduate Research Office will review your paper to verify that it conforms to these requirements, which include format specifications and adherence to standards of scholarly writing.

Theses must obey specific formatting requirements as outlined in this *Manual*. It is therefore very important to rely on this *Manual* and to meet with advisors from the Undergraduate Research Program for a Format Review before submitting your thesis. It is most helpful if you read over this manual *before* you begin writing your thesis. This manual has three main sections:

1. How to Organize Your Thesis (pg. 3-8)
  - a. Explains how you will divide up your thesis into sections: what the sections are (abstract, chapters, etc), the order in which they will appear, and how to correctly format them. Your thesis will contain front matter (the title page, approval page, table of contents, abstract, etc), the body of the paper (divided in chapters and subheadings), and back matter (appendices and references).
2. How to Format Your Thesis (pg. 9-14)
  - a. Explains the correct margins, page numbers, presentation of tables and figures, and all the other details of your thesis. These details are small but very important and often tricky to implement.
3. Sample pages (pg. 16-25)
  - a. Includes the Title Page, Approval Page, Table of Contents, and a Sample Text Page. These examples may be used as guidelines for how your completed and properly formatted thesis should appear.

In addition to this *Senior Thesis Format Manual*, you need to be familiar with the *Honors Degree with Distinction and Degree with Distinction Handbook*, which can be obtained from the Undergraduate Research Office or online at [www.urp.udel.edu](http://www.urp.udel.edu). Guidelines for faculty sponsors of Honors Degree with Distinction and Degree with Distinction candidates are also available at the Undergraduate Research Office.

This 2010 edition of the *Senior Thesis Format Manual* is prepared and edited by the Undergraduate Research Office, adapted from the *Thesis and Dissertation Manual* prepared by the University Of Delaware Office Of Graduate Studies.

UNDERGRADUATE RESEARCH OFFICE  
12 W. Delaware Ave.  
302-831-8995  
e-mail: UndergradResearch@udel.edu  
8:30 a.m. - 5:00 p.m.

## TABLE OF CONTENTS

PREFACE.....	i
CONSULTING SERVICES & THESIS HELP.....	iv
THE UNIVERSITY'S STANDARDS .....	1
HOW TO SUBMIT YOUR THESIS.....	1
USING A COMPUTER PROGRAM TO PREPARE YOUR THESIS .....	2
HOW TO ORGANIZE YOUR THESIS.....	3
Non-Standard Theses.....	3
The Order of the Thesis' Sections.....	3
Details about the Thesis' Sections .....	3
Title Page.....	4
Approval Page.....	4
Epigraph or Frontispiece .....	5
Acknowledgments .....	5
Dedication.....	5
Preface .....	5
Table of Contents.....	6
List of Tables and List of Figures.....	6
Glossary, Nomenclature, List of Abbreviations, Terms, or Symbols.....	7
Abstract.....	7
Chapters .....	7
References.....	7
Appendices .....	8
Dividing Your Thesis into Volumes.....	8
Writing Your Thesis in a Foreign Language .....	9
HOW TO FORMAT YOUR THESIS .....	10
The University's Format Specifications.....	10
Paper Quality .....	10
Margin Specifications.....	10
Page Numbering .....	10
Font Specifications .....	11
Spacing Specifications.....	11
Captions/Equations/Symbols.....	12
Print Specifications.....	12
Tables, Figures, Photographs, and Pocket Materials.....	12
Tables and Figures.....	12
Preparing Tables and Figures .....	13
Oversize Tables and Figures.....	14
Photographs .....	14
Image Requirements for Visual Arts and Design Theses .....	14
Pocket Material.....	15

Computer Disks .....	15
Slides .....	15
Videotapes .....	15
EXAMPLES OF DEGREE TITLES .....	15
SAMPLE PAGES	
Thesis Title Page for the Degree with Distinction .....	17
Thesis Title Page for the Honors Degree with Distinction.....	18
Thesis Approval Page for the Degree with Distinction .....	19
Thesis Approval Page for the Honors Degree with Distinction .....	20
Table of Contents Page .....	21
Table of Contents for a Thesis with Decimal System Headings .....	22
Text Page .....	23
Text Page for a Thesis with Decimal System Headings .....	24
List of Figures .....	25
List of Tables .....	26

## CONSULTING SERVICES AND THESIS HELP

### General Information

*Undergraduate Research Office*  
12 W. Delaware Ave.  
302-831-8995  
e-mail: UndergradResearch@udel.edu

A sample of a correctly formatted thesis is available at <http://www.urp.udel.edu/thesis/SampleThesis.pdf>

### Assistance with Formatting Your Thesis (technical questions)

*Information Technologies/User Services*  
UD Thesis Layouts  
002 Smith Hall  
302-831-6000  
Ginny Redmond, bitsy@udel.edu

NOTE: when calling, be sure to specify that you are (1) an undergraduate doing a senior thesis, and (2) whether you are using Word or LaTeX.

### Style Sheet Guidance

Refer to the “read-me file” for instructions on how to use the Style Sheets. The Style Sheets are available at <http://www.udel.edu/topics/udthesis/>. Contact IT (see above) if you have technical difficulties with the StyleSheets.

### Assistance with Writing Your Thesis

*University Writing Center*  
016 Memorial Hall  
302-831-1168

NOTE: appointments can be made online at <http://www.english.udel.edu/wc/>. Students can only make up to two one-hour appointments per week at the University Writing Center, so plan accordingly (do not show up expecting to get through your entire thesis in the one hour!).

*Grammar Hotline*  
302-831-1890

*Graphic Communications Center*  
*Photocopying Services*  
Trabant University Center  
302-831-0483

Perkins Student Center  
302-831-8920

## **Other Helpful Resources**

Review theses by former students. This can be helpful and strongly encouraging (though remember that the format specifications within this book are to be adhered to. Do not use a former student's thesis as a format guide, as some requirements may have changed!)

Thesis candidates in the visual and design arts should make an appointment with Susan Serra to discuss the format for the written portion of their thesis.

## THE UNIVERSITY'S STANDARDS

Senior thesis papers must reflect the writer's ability to conduct scholarly research and to report the results in a manner worthy of publication. The first law of academic writing is intellectual honesty. Students at the University of Delaware are expected to be honest and forthright in their academic endeavors. Proper recognition of the work of others is required. To falsify the results of one's research or other findings with the intent to deceive (fabrication), or to use the words or ideas of another as if they are one's own work (plagiarism) violates this law. If you are uncertain about what constitutes plagiarism or fabrication, it is your responsibility to consult your advisor and/or any of the listed references in this manual for clarification.

Your thesis director and committee members also bear responsibility for ensuring that your research topic and the findings make a significant, original contribution to the field and that your presentation meets the criteria for scholarly writing. **Your thesis director's and committee members' signatures on the approval pages of your paper attest to their having read the final version and to your having met these standards.**

**We expect the official copy of the paper you turn in to the Undergraduate Research Office to be in perfect condition,** ready to be reviewed and signed by the Chairperson of the University Committee on Student and Faculty Honors (UCSFH) (Degree with Distinction) or Director of the University Honors Program (Honors Degree With Distinction).

## HOW TO SUBMIT YOUR THESIS

You are required to submit two final, official copies of your thesis to the Undergraduate Research Office: one on bond paper, and one electronically via the Undergraduate Research Office's Senior Thesis website. The paper copy will include the appropriate signed approval page for the degree (see the example in the Sample Pages; you will need to collect the signatures of the your three committee members). You must also submit a **money order** (NO checks or cash) for \$7.75, made out to the University of Delaware. The deadline for submitting your thesis and money order is noon of the last Friday before Commencement (check your HDWD/DWD handbook for details).

Once your paper is accepted by the Undergraduate Research Office and signed by the Chair of the UCSFH or the Director of the Honors Program, both copies will become the property of the University of Delaware. One copy will be bound and placed in the University Archives, and one will be held in an electronic archive available in the reading room at 12 W. Delaware Ave. You may make arrangements for binding personal copies through the University bookstore or a copying service company. You may submit extra approval pages for the Chair of the UCSFH or Director of the Honors Program to sign for your personal copies if you wish. Please include a mailing address.

## USING A COMPUTER PROGRAM TO PREPARE YOUR THESIS

To help you prepare your thesis, the university's Information Technologies/User Services staff has developed procedures for several word processing programs. Using a free “UDThesis Layout” (i.e., a template) and an appropriate word processing package, you can more easily produce a paper that meets the formatting requirements described in this manual. The template, called a StyleSheet, is a base document that allows you to choose from among set styles (Chapter, First Section Heading, Paragraph, etc), each of which has already been set to the correct formatting. These StyleSheets can be found at <http://www.udel.edu/topics/udthesis/>.

It is easiest to write directly in the templates rather than copying text into them. Please note: the StyleSheets are not perfect; you should still double-check the requirements in this *Manual*. There is a “readme” on the above website which explains how to use the StyleSheets, including details about the various styles you can use and when you should use them.

There are two versions of the StyleSheets: “numbered” and “unnumbered.” Each version is a type of organizational scheme you can use to organize your thesis (please see p. 3 and the sample Text and Table of Contents pages for examples). The “numbered” scheme uses a decimal system to organize the subsections: each section is identified by a number, such as 1.1 (first subsection in Chapter 1) or 2.1.1 (the first sub-subsection in the first subsection of Chapter 2). The “unnumbered” scheme uses indenting and underlining to divide the sections.

The Table of Contents in the StyleSheets can be updated to automatically fill in the page numbers, provided you have used the correct styles within your Thesis. HOWEVER, doing so will remove any modifications you made to the Table of Contents. Modifications are necessary for the Table of Contents to meet the formatting requirements: it should match the samples (pages 21 & 22) *exactly* with regard to capitalization, bolding, and spacing. These modifications should be one of the last formatting changes you make.

User Services Consulting Center (see contact information on p. iv) is your source for detailed information about free UDThesis style sheets and macros, the procedure for using computer accounts, and the location and availability of public computers on campus. User Services staff members are available at the Consulting Center to help you with questions. Often questions can be answered through phone or email; however, appointments can be arranged for more detailed problems.

## HOW TO ORGANIZE YOUR THESIS

A thesis is much longer than an ordinary paper or journal article and thus requires very careful and detailed organization. All standard senior theses use the **chapter** (p. 7) as the basic unit of division, with subdivisions as appropriate. Once you have decided where your chapter divisions and subdivisions will be, you will employ an organizational scheme to help you format the headings.

Students choose one of two organizational schemes to organize chapter sections: the heading scheme or the decimal system. Whichever scheme you choose, be consistent; do not mix organizational schemes. If you list subordinate headings from one chapter in the table of contents, you must do so for all of your chapters. Remember, regardless of which system you choose, your ideas should develop in a logical way from general to specific. A reader should be able to tell at a glance from your organizational scheme which ideas are of greater, lesser or equal importance. Your **table of contents** (p. 6) will reproduce the organizational scheme used in your text. Remember, your table of contents is the only index to your paper. It must be accurate and complete.

Although you will want to avoid breaking your paper up into too many small parts (most students favor chapters with one or two levels of subdivisions), both the heading scheme and the decimal system can be expanded to accommodate several levels of headings. If you use the heading scheme, you'll need to base your series of headings on the chapter that has the most levels. A decimal system can be expanded simply by carrying a heading to another decimal place. *The Sample Pages, located in the back of this Manual, provide visual examples of these systems (samples of both the Table of Contents and the text are provided).*

### Non-Standard Theses

Senior Thesis Candidates in the Creative Arts produce Theses which do not consist primarily of words or figures. The formatting requirements differ accordingly, as the bulk of the written thesis does not consist of chapters but of reproductions of the creative project. These reproduced images must be of good quality and accompanied by text from the artist that assists a viewer's understanding of the history, context, and significance of these works for their creator. Creative writing theses also require a similar introduction. Please contact the URO for details about formatting senior theses in the creative arts.

### The Order of the Thesis' Sections

All standard senior theses are comprised of a number of sections, which should be assembled according to the following sequence (**required items are in boldface**). Directly following the list below are descriptions of each section. Refer to "How to Format Your Thesis" (p. 10) for regulations on page numbering and other specifications.

Preliminary pages or *front matter*:

**title page;**  
**approval page;**  
epigraph or frontispiece (optional, seldom used);  
acknowledgements (optional)

dedication page (optional)  
preface (optional, seldom used)  
**table of contents;**  
**list of tables and/or list of figures, in either order;**  
glossary, nomenclature, or list of abbreviations, terms or symbols (optional)  
**abstract**

Body of the paper:

introduction (sometimes an introduction precedes the first chapter as the first section of the body);  
**chapters**

Final pages or *back matter*:

**references** or endnotes, and works cited and/or bibliography. (You may prefer to include your footnotes on the chapter pages or place endnotes or references at the end of each chapter. When notes or references are located at the end of each chapter, a bibliography is also included at the end of the paper.);  
appendices (optional, *unless you have Human Subjects. A copy of Human Subjects Approval or Exemption must be included as an appendix.*)

### **Details about the Thesis' Sections**

#### **Title Page**

- The title page counts as page number i (although the number does not appear on the page)
  - See p. 10 for details
- Title
  - Use all uppercase letters
  - Use word substitutes for formulas, symbols, Greek letters, and so on
  - Double space the title
- Your Name
  - Use mixed case (upper and lower case) letters
  - Use your full legal name as it appears on the Registrar's records.
  - Single space the statement that follows your name.
- Your Degree
  - Be sure you have the correct major (check with your department) and the correct *semester* and *year* of degree conferral (degrees are conferred in *Fall, Winter, Spring, and Summer*).
  - “With Distinction” is the last part of your degree.
  - See p. 16 for examples of degree statements or contact Susan Serra in the URO if you are unsure.
- Include a copyright notice.
- *See the Sample Pages for both the DWD (p.17) and HDWD (p. 17)*

#### **Approval Page**

- The approval page counts as page number ii (although the number does not appear on the page)
  - See p. 10 for details

- Title
  - Match exactly to that on the title page.
- Signatures
  - Use each professor's correct full first name, middle initial, last name, and degree.
    - List each professor's highest degree.
  - If a committee member has a dual role (that of thesis advisor and chair of the UCSFH, for example), list each role separately.
  - The chair of the UCSFH (DWD) or the Director of the Honors Program (HDWD) will sign the approval pages after your paper has been accepted by the Undergraduate Research Office.
  - If you have more than three committee members, the URO can tell you how to list them.
  - If you have two thesis directors, list each one as "Professor in charge of the thesis on behalf of the advisory committee."
  - The fourth signature will be collected by the Undergraduate Research Program. A place should be left for the fourth signature on the approval page.
- See *Sample pages for both the DWD( p. 19) and HDWD (p. 20)*

**Epigraph (a brief quotation or 2-4 lines of verse) or Frontispiece (photograph or map)**

- Optional
- The source of an epigraph or frontispiece is indicated below the quotation or figure, but is not listed in the bibliography.
  - Neither are listed on the table of contents.

**Acknowledgments**

- Optional
- Besides expressing your professional and personal indebtedness, this section acknowledges permission to use previously copyrighted material.
- Though separate from the formal "scholarly" parts of your paper, the acknowledgments section should be appropriate in tone, language, and length for an academic document.
  - If a paper has a preface, acknowledgments are included in the preface.
  - This is not listed on the table of contents.
  - It should be no more than two pages.

**Dedication**

- Optional
- Most students choose to place the dedication, if any, at the end of the acknowledgments, although you may use a separate page.
  - This is not listed on the table of contents.

**Preface**

- Optional
- Usually there is no reason to include a preface in your paper. Any introduction appears logically as the first chapter. Only in cases where the genesis of the work needs to be explained or where the author's contribution to a work with several authors needs to be noted is a preface necessary.
  - A preface includes acknowledgments and appears where the acknowledgments normally would appear
  - This is not listed on the table of contents.

## Table of Contents

- You are **required** to include in the table of contents all preliminary pages that **follow** the table of contents.
- The table of contents is the **only index** the reader has to your paper. This table reveals the nature and course of your research and the method you have chosen to present the results of your work.
  - You will want to be sure that the organization scheme you display in the table of contents matches the scheme in the text. The systems of indenting you use in the table of contents to indicate subdivisions within chapters should match exactly the subdivision system in the chapters. *Titles of sections listed in the table of contents must match exactly the titles that appear in the text. Page numbers must be accurate.* It pays to double-check these details; they are a source of frequent errors that cost time and money to correct if you have to reprint these pages.
- Use leader dots (...) to connect the last word of the headings to page numbers.
  - Heading titles should not run into the page number column
  - Please contact the URO for assistance if you are unfamiliar with creating leader dots in Word.
- Spacing
  - Single space within each level
  - Double space between level
- You may underline titles of books or works of art in the table of contents, but do not underline subdivision headings.
- *See Sample Pages 21 & 22*

## List of Tables and List of Figures

- These lists follow the table of contents. You **must** include these lists if you have tables or figures in your paper, even if there is only one such item.
- The list should include:
  - the table (or figure) number
  - the caption (**exactly** as it appears in the text **at least** up through the first period if the caption is more than one sentence long)
  - and the page number for every table (or figure) in the paper, including those in the appendix.
    - You do not have to individually list tables or figures that are grouped under a single appendix title
- The lists can appear in either order.
  - **Use separate pages** for each list.
- You may choose one of two alternative numbering systems for tables or figures:
  - number the tables or figures consecutively (1,2,3) throughout the text
  - number by chapter using a decimal system (e.g., 2.1 for the first table in chapter 2, and so on).
- Use leader dots (...) to connect the captions to page numbers.
  - If your figures or tables appear on facing pages, put the page number on that page which the *number and caption* appear.
- Spacing
  - Single space within each entry
  - Double space between each entry
- *See Sample Pages 25 & 26*

## Glossary, Nomenclature, List of Abbreviations, Terms, or Symbols

- Optional
- You may include such a list with definitions as part of your front matter.

## Abstract

- The university's guidelines **require** that all theses have an abstract included in the paper as the last section of the front matter.
- An abstract is a concise summary of your paper that may contain a
  - a short, definitive statement of the problem or area of investigation,
  - a brief description of the research method and design,
  - and a condensed summary of the major findings and the significance thereof.

## Chapters

- All standard theses are divided into chapters which logically divide up the information.
  - You and your thesis director will decide on the appropriate number of chapters.
- Margin
  - The first page of each chapter has a 2" top margin.
- Centered at the 2" point is the word "Chapter" and the chapter number
  - use mixed case letters
  - use Arabic numerals
    - e.g., "Chapter 1"
- Chapter title
  - Centered
  - double-spaced below "Chapter #"
  - title appears in **bold**, UPPERCASE letters.

## References

- A bibliography or works cited list is **required** in a thesis.
- **NOTE: Each discipline treats references differently. Guided by the practice in your field and the wishes of your department or committee, you will select an established reference style appropriate to your work.**
  - MLA and APA reference styles, the documentation style suggested by *The Chicago Manual of Style*, and the citation systems of leading journals in your field are acceptable styles, as long as their guidelines do not conflict with the specific requirements of the University of Delaware.
- References must begin on a new page
- Unnumbered references must be listed in correct alphabetical order
  - 12-point type like the rest of your text
- Title of references
  - either "References" or "Bibliography," as you prefer
    - do NOT use "Works Cited" unless every source in your list is actually cited in your text.

NOTE: The Undergraduate Research Office expects you to be scrupulous in documenting the work of others, to follow the formatting guidelines listed in this manual. We expect that all sources cited in your text will be carefully listed in your references. Names and dates must be accurate in both locations. Beyond these requirements, you are free to choose a recognized documentation style.

The following six styles of documentation are widely used in scholarly writing. Consult your thesis director to determine which style works best for you:

1. *Endnotes*, with numbered citations in the text keyed to documentation notes placed at the end of chapters, and bibliographic listings at the end of the text (*MLA* and *Chicago*);
2. *Footnotes*, with number citations in the text keyed to documentation notes placed at the bottom of the page where they occur, and bibliographic listings at the back of the text (*MLA* and *Chicago*);
3. *Author-date citations* (author's name, publication date, and page numbers placed in the text), with full documentation/bibliographic data in a list at the end of the text (*MLA*, *Chicago*, *APA*);
4. *Web source citations* may be researched in two publications: *Electronic Styles: A Handbook for Citing Electronic Information* (1996 edition) and *Online: A Reference Guide to Using Internet Resources*, 2003.
5. *Parenthetical citations* (author's name and page numbers placed in parentheses in the text), with full documentation/bibliographic data in a list at the end of the text. (*MLA*);
6. *Bracketed number citations* keyed to numbered, **not** alphabetical, bibliographic entries. Such a list may appear at the end of each chapter or the entire manuscript. In this system, references in the text are numbered in order of appearance: the first reference is [1], the next is [2], and so on to the end of the chapter or paper. Each time you cite the same author/work, you use the original number you assigned that reference on its first appearance in the text. You might have a sequence of numbered references in your text that looks something like this: [1], [2], [3], [1], [4], [5], [3], [6], and so on. **Do not use a random numbering system.**

### Appendices

- Optional
  - NOTE: students who use Human Subjects **must** include their approval from the Human Subjects Review Board or an exemption from the Human Subjects Review Board.
- Place the appendix or appendices after the references.
- Title all appendices and list the titles in the table of contents.
  - Do not designate an appendix A if there is only one appendix; simply refer to it as the "Appendix".
- Appendix title
  - 2" down from the top of the first page of each appendix
  - OR place the title on a separate page preceding each appendix.
- An appendix may be included as pocket material when appropriate.

### Dividing Your Thesis into Volumes

The bindery cannot bind papers over 2-1/4" thick; theses larger than this must be divided into separate volumes. Choose a logical division and prepare a volume title page for each volume stating the title, number of volumes, volume number, page numbers included in the volume, author, and so on. Check with the Undergraduate Research Office for more information.

## **Writing Your Thesis in a Foreign Language**

All theses must be written in standard American English except for papers written in a foreign language as approved by the Department of Foreign Languages and Literatures. If you write your manuscript in a foreign language, provide English translations of the title page and the abstract. Place them before the foreign language title page and abstract, respectively. Do not number these English pages or count them in the numbering.

# HOW TO FORMAT YOUR THESIS

## The University's Format Specifications

Attention to form and mechanics reduces the possibility that key facts and significant information will be lost to the reader. Please read through all of the following information *very carefully!*

### Paper Quality

- For your official copy, use white 8½ x 11-inch paper, with a 25% minimum cotton content (you should see a watermark on the page when you hold it to the light). Do not use easy-erase paper. The university bookstore sells paper that meets these requirements, but you may also purchase acceptable paper at photocopying services, office supply stores, and stationery stores.
- Use the same brand, weight, shade of white and texture of paper throughout your thesis. Exceptions may be made for photographic plates, foldouts, and pocket material. Be sure to purchase enough paper to use if corrections are requested.

### Margin Specifications

- The **left** margin (bound-in side) and **bottom** margin for all pages--including tables, figures and appendices--must be at least **1-1/2"**. The **top** margin and **right** margin must be at least **1"**. **These margins are important because the bindery will trim all four sides of your paper.**
- Use a **2"** top margin on the title page and heading pages of major sections such as acknowledgments, table of contents, list of tables, list of figures, abstract, list of symbols (or terms or nomenclature), chapter, appendices, and bibliography/references.
- Use a ragged right margin.
- NOTE: photocopying enlarges text; consider running your final copy at 98% of the original if your text is at the margin limits.

### Page Numbering

- Check that all page numbers are the same font (size and type) as the text. This is especially important when importing text from other programs.
- Numbers will appear on all pages in your paper **except** the title page and approval page.
  - Use one number per page; do not use 24a, etc...
- **Page numbers should be consistently centered at least 3/4" from the bottom paper edge on ALL pages.**
- PRELIMINARY PAGES (front matter): The title and approval pages count as page numbers i and ii, although these numbers do not appear on the pages.
  - **Lowercase Roman numerals first appear on the page that follows the approval page** (usually the acknowledgments page, but occasionally an epigraph page or the table of contents page). This will be page iii of your thesis.
  - These Roman numerals continue consecutively through the preliminary pages, ending with the abstract, the final preliminary page.

- TEXT: Page numbering in Arabic numerals begins with page 1, the first page of the text (in Chapter 1 or the Introduction), and continues sequentially to the end of the paper.
- Mindful of Murphy's Law (“If something can go wrong, it will”), **you will want to check the pagination of your manuscript before and after you photocopy it.**

### Font Specifications

- Use any standard font such as Times Roman, Times, or Helvetica. Do not use italic (script) print except for foreign words, book or journal titles, or special emphasis.
- Use 12-point font size for all text including footnotes, endnotes, numbers of figures and tables, and captions of figures and tables.
- Use the same font throughout the paper.
- Different fonts and font size may be used *within* the appendices and *within* tables and figures (minimum is 9 pt.).

### Spacing Specifications

- Use standard **double spacing** for the text of all preliminary pages such as acknowledgments and the abstract, for the body of the paper, and for text in the chapters and appendices. (In appendices, you may **single** space material other than regular text.)
- Consistently **double** or **triple** space between paragraphs.
- Single spacing is preferred for items in lists, notes, and lists of figures and tables, but **double space between items.**
- **Single** space all table headings and figure captions.
- **Single** space block quotations (block quotations are four lines or longer).
  - **Double space** before and after a block quotation unless a new paragraph follows it; in that case, triple space after the quotation.
  - Indent block quotations one-half inch from both the left and right margins.
  - *Do not enclose block quotations in quotation marks.*
- Indent paragraphs consistently (one-half inch is the default).
- Be sure the spacing above and below headings throughout your paper is consistent.
- No more than two consecutive lines should end with divided (hyphenated) words.
  - Divide words as they are in the dictionary.
  - Do not hyphenate the last word in a paragraph or split a word across two pages.
- Center, **bold**, and type in UPPERCASE all your major section titles on the heading pages-- ACKNOWLEDGMENTS, ABSTRACT, Chapter TITLE (*see Sample Pages*), BIBLIOGRAPHY, and so on.
- **Single** space your footnotes and endnotes but **double** space between each entry.

- Place footnotes at the bottom of the appropriate page, or place endnotes in numerical order at the end of each chapter, or at the end of the paper.
- Do **not** split references, bibliographic entries, table headings or figure captions of tables and figures across two pages.
  - Footnotes at the bottom of the page may continue to following pages.
- Do not leave a heading as the last line on a page or begin a new page with the last line of a paragraph. Do not submit a page with only one line of text.
  - A heading at the bottom of the page must have at least two lines of text beneath it.

### **Captions, Equations, and Symbols**

- *If a table or figure caption is too long to include on the page with the illustration, you may type it on a preceding, numbered page or you may choose to make this a left-hand (facing) page--a page that, when turned, faces the figure or table so that both may be viewed at the same time.*
- Use the same font for all equations. This may differ from that used in the text.
- Number equations by chapter or consecutively throughout your paper.
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- Do not use handwritten labels to point out panels of a figure.
- Do not include handwritten calculations, computer codes, or other material in your manuscript.

### **Print Specifications**

- Print on one side of the page only.
- Use a laser or ink jet printer.
- You may not use correction tape or correction fluid on the official copy of your paper.

## **Tables, Figures, Photographs, and Pocket Materials**

### **Tables and Figures**

- A **table** is a columnar arrangement of information – often numbers – organized to save space and convey relationships at a glance. Consult a style manual when preparing tables.
- A figure is a graphic illustration, such as a chart, graph, diagram, map, photograph, or plate.
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- Give numbers and headings or captions to all tables and figures that appear in the text.
  - Number the tables and figures consecutively throughout the paper, or use a decimal system to number them by chapter.
- Type **table** numbers and headings flush left or centered two lines **ABOVE** the table.
- Type **figure** numbers and captions flush left or centered two lines **BELOW** the figure.
- The number and heading or caption should follow the same horizontal or vertical direction as the table or figure.
- Use the same font and size for all table numbers and headings and all figure numbers and captions. This should match that used for the text. You may use different fonts within the figure or table.
  - Be consistent in using a capitalization scheme when you refer to figures or tables within your text.
- The number, heading or caption, and page number of each table or figure must be identical to the number, heading or caption, and page number used in the list of tables and list of figures.
  - NOTE: if the heading or caption with the table or figure is especially long, the heading or caption in the list may repeat just the first full sentence.
- Fit the tables and figures, including numbers and captions, into the same margin requirements as the text.
  - You may continue a table or figure onto succeeding pages.
  - Repeat the table number and the word *continued* or *cont.*, but do not repeat the caption. (See below for suggestions on how to handle large tables or figures.)
- Tables and figures in the text should appear as soon as possible after they are first mentioned.
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  - You may also group several small tables or figures on a single page.
  - In cases where numerous tables or figures would disrupt the flow of the text, you may group them at the end of the chapter, in the order of their mention in the text.
- You may continue with the consecutive numbering system for tables and figures in the appendix, or you may use an appendix numbering system. (The first table in the appendix would be Table A.1, the first figure would be Figure A.1, and so on.)
  - If you have many appendix tables and/or figures that can be grouped under an appendix title, you do not have to give them separate titles, numbers, headings or captions or list them in the list of tables or figures. The appendix title in the table of contents should be a sufficient description, as illustrated below.

## Appendix

<b>A MECHANICAL DRAWINGS.....</b>	<b>132</b>
<b>B DATA TABLES.....</b>	<b>136</b>

### **Upsize Tables and Figures**

- If you have trouble fitting a large table or figure within the margins, consider the following options.
- Place the table or figure and its number and caption sideways (landscape) on the page.
  - The page number will still appear in its usual position at the bottom of the page, as if you were printing in normal (portrait) orientation.
  - You may have to run the page through the printer twice, or use a text box, to achieve this.
  - The figure or tables should have the top edge near the left binding side of the paper.
- Use the entire 6"x 9" typing area for the table or figure and either a) print the number and caption on the preceding page (centered, page number at the bottom), or b) center the number and caption on a **facing page**--a page that, when turned, faces the illustration so that both can be viewed at once.
  - The front side of the facing page will be blank.
  - A page number will appear centered at the bottom of the facing side. A page number is also put at the bottom of the page with the table or figure.
- Photo reduce the body of the table or figure (but **not** the number, caption, or page number) to meet margin requirements.
  - Do not reduce the table or figure more than 25%.
- Consider including upsize material as pocket material (see p. 15).
- As another option, upsize material can be placed on a foldout page – but, keep in mind that foldouts are hard to print.

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  - Three to five color copies of most representative work with captions and page numbers. Include in your list of figures.
- Undergraduate Research Office electronic copy:
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NOTE: students may include the expense of the slides and photographs or color copies in their supply-and-expense grant requests.

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  - If the pocket is an appendix, list it in the table of contents; if it is a table or figure, list it as such, as illustrated below.

<b>1.1</b>	Flowchart .....	39
<b>P.1</b>	Map of Eastern Europe.....	in pocket

### **Computer Disks**

- A computer program that is part of the appendix can be stored on a compact disc and submitted as pocket materials (as opposed to submitting the printed program).
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- Slides should be submitted labeled with your name and a number and encased in a slide sleeve. A separate list of captions should be provided in the list of figures or list of slides.

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*SAMPLE TABLE OF CONTENTS*

**TABLE OF CONTENTS**

<b>LIST OF FIGURES</b> .....	v
<b>LIST OF TABLES</b> .....	vi
<b>ABSTRACT</b> .....	vii
Chapter	
<b>1 CHAPTER HEADING</b> .....	1
First-Level Heading in a Three-Tiered Document.....	2
First-Level Heading in a Three-Tiered Document.....	3
Second-Level Heading in a Three-Tiered Document.....	5
Second-Level Heading in a Three-Tiered Document.....	9
Third-Level Heading in a Three-Tiered Document.....	11
Third-Level Heading in a Three-Tiered Document.....	18
First-Level Heading in a Three-Tiered Document.....	25
<b>2 CHAPTER HEADING</b> .....	34
First-Level Heading in a Three-Tiered Document.....	35
Second-Level Heading in a Three-Tiered Document.....	39
Third-Level Heading in a Three-Tiered Document.....	44
Third-Level Heading in a Three-Tiered Document.....	49
First-Level Heading in a Three-Tiered Document.....	53
<b>BIBLIOGRAPHY</b> .....	55
<b>APPENDIX A: SURVEY INSTRUMENT</b> .....	59
<b>APPENDIX B: EVALUATION FORM</b> .....	63

**TABLE OF CONTENTS**

**LIST OF FIGURES** ..... v  
**LIST OF TABLES** ..... vi  
**ABSTRACT** ..... vii

Chapter

**1 INTRODUCTION** ..... 1

    1.1 Historical Development of Amorphous Alloys..... 1  
    1.2 Coercive Force: Origins and Significance ..... 1

        1.2.1 Strain Theory..... 1  
        1.2.2 Inclusion Theory..... 1

    1.3 Projection of Current Work ..... 2

**2 EXPERIMENTAL METHODS** ..... 3

    2.1 Projection of Current Work ..... 2

        2.1.1 Measuring Powders ..... 3  
        2.1.2 Ingot Formation ..... 4

    2.2 Irradiation of Current Work ..... 2

        2.2.1 Sample Holder ..... 6  
        2.2.2 Van de Graaff Accelerator ..... 9

            2.2.2.1 Ion Source..... 10  
            2.2.2.2 Accelerating Potential ..... 10

**3 RESULTS**..... 35

**4 DISCUSSION**..... 40

**REFERENCES** ..... 43  
**APPENDIX: DATA**..... 45

## **Chapter 1**

### **CHAPTER HEADING**

A chapter heading begins on a new page with at least two inches of white space above the heading. The heading is centered between the left and right margins, and it appears in all capital letters. Triple-space (leave two-blank lines) before the first paragraph.

#### First-Level Heading for a Three-Tiered Document

A first-level heading is triple-spaced below the preceding paragraph, leaving two blank lines above the heading. It is underlined, centered between the margins, and typed in mixed-case letters. Double-space (leave one blank line) below the heading before typing the paragraph text.

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## **Chapter 1**

### **INTRODUCTION**

#### **1.1 Historical Development of Amorphous Alloys**

Although amorphous metallic alloy production was first reported by Duwez and Willens (1960) more than two decades ago the extent of current research indicates the technical interest it has aroused.

#### **1.2 Coercive Force: Origins and Significance**

The origin of the coercive force in amorphous alloys is currently not well defined. As a starting point we can look at the coercive force in crystalline materials and the prevailing theories of its origin.

##### **1.2.1 Strain Theory**

Historically the strain field theory developed first. Strains arise in materials as the result of applied stress (external forces) or residual stress (internal forces).

##### **1.2.2 Inclusion Theory**

The inclusion theory considers nonferromagnetic inclusions and their effect on domain wall motion.

**LIST OF FIGURES**

1.1	Graphical interpretation of the rescaled range.....	18
4.1	Relative increase in forecasting error variance versus the fractional differencing parameter.....	45

**LIST OF TABLES**

2.1	Bounds for the Standard Deviation of the Estimates of the Autocorrelation Coefficients .....	23
2.2	Relative Increase in Mean Square Forecasting Error Resulting from Misspecification of a Fractional Noise .....	25
3.1	Log-Periodogram Regression Test .....	36
5.1	Log-Periodogram Regression Test-Simulation .....	52