Drexel University

Thesis Manual

A Handbook of requirements for format and arrangement.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td><strong>General Information</strong></td>
<td>1</td>
</tr>
<tr>
<td>Thesis and Project Types</td>
<td>1</td>
</tr>
<tr>
<td>Doctoral Thesis</td>
<td>1</td>
</tr>
<tr>
<td>Master’s Thesis</td>
<td>1</td>
</tr>
<tr>
<td>Master’s and Doctoral Projects</td>
<td>1</td>
</tr>
<tr>
<td>Special Thesis/Dissertation Issues</td>
<td>2</td>
</tr>
<tr>
<td>Copyright</td>
<td>2</td>
</tr>
<tr>
<td>Plagiarism</td>
<td>2</td>
</tr>
<tr>
<td>Confidential or Secret Theses</td>
<td>2</td>
</tr>
<tr>
<td>Style</td>
<td>2</td>
</tr>
<tr>
<td>Thesis Approval Process</td>
<td>2</td>
</tr>
<tr>
<td>Approval Form Requirements</td>
<td>3</td>
</tr>
<tr>
<td>Graduate Thesis/Dissertation Approval Form and Signature Page</td>
<td>3</td>
</tr>
<tr>
<td>Graduate Program Completion Form</td>
<td>3</td>
</tr>
<tr>
<td>Library Submission Information</td>
<td>4</td>
</tr>
<tr>
<td>Electronic Submission</td>
<td>4</td>
</tr>
<tr>
<td>Submission Deadlines</td>
<td>4</td>
</tr>
<tr>
<td><strong>Thesis Format and Appearance</strong></td>
<td>4</td>
</tr>
<tr>
<td>Methods of Production</td>
<td>4</td>
</tr>
<tr>
<td>General Formatting Guidelines</td>
<td>4</td>
</tr>
<tr>
<td>Type</td>
<td>5</td>
</tr>
<tr>
<td>Margins</td>
<td>5</td>
</tr>
<tr>
<td>Pagination</td>
<td>5</td>
</tr>
</tbody>
</table>

Last Updated August 2023
Spacing ............................................................................................................................................. 5
Footnotes ........................................................................................................................................... 5
Tables and Figures ........................................................................................................................... 6

**Thesis Arrangement** .................................................................................................................... 7

Quick Guide to Arranging Your Thesis ............................................................................................ 7
Title Page ........................................................................................................................................... 7
Copyright Page .................................................................................................................................. 8
Dedications ......................................................................................................................................... 8
Acknowledgments ............................................................................................................................ 8
Table of Contents ........................................................................................................................... 8
List of Tables ..................................................................................................................................... 9
List of Figures ................................................................................................................................... 9
Abstract .......................................................................................................................................... 9
Blank Page ...................................................................................................................................... 10
Text .................................................................................................................................................. 10
Headings in Text ............................................................................................................................. 10
Footnotes (optional) ....................................................................................................................... 10
Bibliography (or List of References) ............................................................................................... 10
Appendices ..................................................................................................................................... 11
Vita (Ph.D. only) ............................................................................................................................. 11
Blank Page ...................................................................................................................................... 11
Introduction

This manual explains the format and arrangement requirements for your thesis as established by the Graduate College of Drexel University; however, please refer to your individual college/school/department/program handbook and consult your college/school officials for any additional requirements.

Because Drexel Thesis format procedures may change from year to year, be sure you use the most recent version of the Thesis Manual (available at http://www.drexel.edu/graduatecollege) to format your thesis. Do not use previously submitted theses as formatting guidelines.

General Information

Thesis and Project Types

Doctoral Thesis

The Doctoral Thesis, or Dissertation, is an extended written treatise that represents original results and interpretations of a unique investigation by the degree candidate. It is required as partial fulfillment for advanced and professional degrees at Drexel University.

Master’s Thesis

The Master’s Thesis must report independent work but need not include original research by the candidate. Not all departments at Drexel University require a thesis as partial fulfillment for a Master’s degree (check with your graduate department for further information).

Master’s and Doctoral Projects

Graduate students who complete a final project at the end of their program (e.g. Doctor of Nursing Practice Project, Capstone Projects, Case Studies, etc.) have the option to submit their projects to the Drexel Research Discovery portal, Drexel’s online digital repository, where they are made publicly accessible. Unlike theses and dissertations, submission of graduate projects is voluntary. A student who submits their graduate project must sign an ETD Deposit Agreement, which authorizes Drexel University to provide access to the project.

If you are submitting a graduate project, instead of a traditional thesis/dissertation, visit the Drexel University Libraries’ website. If you wish to submit your graduate project but your program is not listed, please contact the University Archives at archives@drexel.edu.
Special Thesis/Dissertation Issues

Copyright

Students hold copyright to their theses and dissertations regardless of whether they (a) choose to include a copyright page in the bound copies of their thesis or (b) register with the Copyright Office. Like other written works, copyright is conferred upon creation, that is when the thesis is written. For more information, see the United States Copyright Office website. More information about how to avoid infringing on someone else’s copyright as well as how to protect your own copyright is available via ProQuest.

Plagiarism

If you include in your thesis manuscript copyrighted material that goes beyond the limits of “fair use,” you are responsible for obtaining written permission from the copyright holder. Drexel University takes no responsibility for damages that may arise from copyright violations by a degree candidate. Please note Drexel’s Academic Integrity Policy. You should also note the Drexel University Student Handbook and information on the Student Conduct website.

Confidential or Secret Theses

As a general rule, it is inappropriate for thesis research to be undertaken on topics that are classified confidential or secret for reasons of national security, or which involve restricted or proprietary information. No thesis covering such topics may be presented without appropriate clearances or releases; these items are the responsibility of the candidate. All researchers must remove or obscure any personal information of your own or of participants in your research.

Style

You can use any professionally recognized style appropriate to your field of study. We recommend consulting a style manual in your field or one of the style manuals listed below. You should also consult with your academic department.

- A manual for writers of term papers, theses, and dissertations/Kate L. Turabian, 6th ed. 1996 Available at Hagerty Reference (LB2369 .T8 1996) and Queen Lane stacks (Z 253 T929m 1996)

Thesis Approval Process

Individual academic departments may have additional requirements or may provide more details not included in this manual. Please refer to your program handbook and check with your advisor to find out if you need to follow any special requirements.

1. After you defend, make all content changes as required by your defense committee.
2. Obtain all required committee signatures on the Graduate Thesis/Dissertation Approval Form and Signature Page. For all PhD students, please ensure this is recorded in the E-Forms system.

3. Format your thesis according to the guidelines set forth in this manual and by your department. Your advisor is the final arbiter of thesis formatting.

4. Submit your final formatted thesis to your supervising professor for approval. The supervising professor will acknowledge approval by signing the Graduate Program Completion Form or by noting the approval in the E-Forms system for PhD students. The department head will also acknowledge approval by signing the form.

5. Submit your thesis online via ProQuest according to the guides on the Graduate College and Drexel University Libraries’ websites. Be sure to print a copy of your submission confirmation to provide to the Graduate College with the Graduate Program Completion Form.

Approval Form Requirements

PhD and professional doctoral degree students, except for DCFT, DNP, and DPT utilize the E-Forms system to document all degree milestones. More information can be found on the Graduation Requirements page of the Graduate College website.

DCFT, DNP, and DPT program students must download and fill out the two required forms: 1) the Graduate Thesis/Dissertation Approval Form and Signature Page and 2) the Graduate Program Completion Form (Found on the “Forms” page of the Graduate College website).

Candidates must also submit an application for degree via their DrexelOne portal by the posted deadlines: http://drexel.edu/drexelcentral/graduation/information/applying-for-degree.

Graduate Thesis/Dissertation Approval Form and Signature Page

1. Fill out the top portion of the form. Be sure to type or print clearly.
2. Obtain the appropriate signatures as listed on the form.
3. Scan and upload a copy of the form and format it as page 1 of your thesis.
4. Submit your thesis as a single PDF file with the Graduate Thesis/Dissertation Approval Form and Signature Page as page 1 electronically via ProQuest.
5. Print a copy of the submission confirmation page or email and submit it to the Graduate College with your Graduate Program Completion Form to graduatecollege@drexel.edu.

Graduate Program Completion Form

1. Complete page 1 of the form and sign and date on page 2. Be sure to type or print clearly. Note the checklist items on page 1 and be sure to complete them before submitting the form.
2. Obtain the appropriate signatures as listed on page 2 of the form.
3. Discuss the embargo request with your advisor, if applicable. The advisor must submit the request to the University Archivist at archives@drexel.edu, if applicable.
4. Submit the completed Graduate Program Completion Form to graduatecollege@drexel.edu by the listed deadline to be cleared for graduation.
Library Submission Information

Electronic Submission

An electronic copy of your thesis is required. Your manuscript will be delivered to ProQuest for inclusion in the ProQuest Dissertations & Theses Global database, and it will be archived and made available by the Libraries in the Drexel Research Discovery Portal Drexel’s open access repository. (https://researchdiscovery.drexel.edu/esploro/)

Your electronic thesis must be in PDF format. Please embed all fonts and make sure there is no password protection on the PDF. You may also submit supplementary files, including research data and multimedia files (for example, .jpeg, .gif, .mov, .avi, etc.). For more information about preparing your PDF file and any supplemental files, please see Preparing Your Manuscript for Submission (Including Supplemental Files) at http://www.proquest.com/go/etd_preparingyourmanuscriptguide. If you have any additional questions about acceptable file formats, please contact libthesis@drexel.edu


Embargo

You may delay the release of your thesis online if you plan to patent, publish, or go into business with your research. If you would like to embargo your thesis, you must obtain your advisor’s permission. Please select the appropriate embargo period (6 months, 1 year, or 2 years) during your electronic submission, and obtain your advisor’s signature approving the embargo on the Completion Form. Embargoes may be renewed by contacting the University Archivist at archives@drexel.edu.

Submission Deadlines

The deadline to submit the signed Completion Form to the Graduate College via graduatecollege@drexel.edu is typically the Wednesday of the first week of classes in the term after you plan to graduate. The deadlines are listed on the “Graduation” page of the Graduate College website.

Thesis Format and Appearance

Methods of Production

All theses and dissertations must be typed using word processing or page layout software. No other production methods are acceptable.

General Formatting Guidelines

This section describes general formatting rules for all theses. For specific formatting and arrangement rules for each part of the thesis, please refer to Section 3, Thesis Arrangement. Please note that many of these guidelines were in place when theses were printed and bound by the Libraries. Now that submission is through ProQuest, please refer to their specific guidelines. If you are planning to have
Type

- Font size must range from 9 to 12 points, including chapter titles.
- Print must be legible and readable.
- No specific font is required; however, traditional serif fonts such as Times New Roman or Palatino are encouraged. Fonts must be consistent throughout the document (e.g., if captions are 10-point Times in chapter 1, they must be 10-point Times in all other chapters).
- Where hand work is required, use black India ink. Characters not available in type should be lettered using lettering guides where possible.

Margins

- All portrait-oriented pages must have a left margin of at least 1 inch throughout the document. Landscape-oriented pages must have a top margin of 1 inch. All other margins must be at least 1 inch.
- Headings and subheadings must have at least two full lines of body text below them. If only one line of text fits below a heading, move the heading to the next page.

Pagination

- Number all pages consecutively
- Place page numbers in the upper right-hand corner of the page, 3/4” from the top.
- Use lowercase Roman numerals for preliminary pages.
- Use Arabic numbers for the text, references, appendices, bibliography, and all other pages including photographs, illustrations, and drawings.
- Begin page numbers on the first page of the text and continue in consecutive order until the end of the dissertation or thesis, including all appendix pages.
- Page numbers on landscaped pages should be in portrait orientation.
- Do not use a period after the page number.
- Do not number the title page even though it is counted as “i.”
- Do not insert lettered page numbers such as 10a, 10b, 10c, etc.

Spacing

- Double space general text material.
- Insert at least 3 single-spaced lines of space above table captions and figures and below figures captions, tables, and other graphics.
- Single space footnotes and long quotations.
- Single space bibliographic entries, but double space between each bibliographic entry.

Footnotes

- Separate footnotes from the text with a line and leave one single-spaced line of space between the line and the footnote.
Tables and Figures

- For both tables and figures, use word-processing software or black India ink and a lettering guide for captions, numerals, symbols and characters.
- Color may be used.
- Insert at least 3 single-spaced lines of space above table captions and figures and below figure captions, tables, and other graphics.
- Place figure captions below figures. Place table captions above tables.
- If a figure or a table continues onto a subsequent page(s), include the following caption: Table x (continued) or Figure x (continued).
- Landscaped figures and tables should have landscaped captions. Page numbers should be in portrait orientation.
- Tables and figures can be grouped in a separate chapter in the text or as an appendix.
Thesis Arrangement

This section is a guide for how to arrange your thesis. Please note that some departments may have separate or additional requirements. All items below, except for optional items, should be included.

Quick Guide to Arranging Your Thesis

- Title page
- Copyright page
- Dedications (optional)
- Acknowledgments (optional)
- Table of Contents
- List of Tables
- List of Figures
- Abstract
- Blank page
- Text
- Bibliography (or List of References)
- Appendices
- Vita
- Blank Page

Title Page

- The title page (which will be page 2 after the Graduate Thesis/Dissertation Approval Form and Signature Page) should look exactly like the sample on page 17 including the Drexel logo. For information about downloading the logo, consult the Graduate College website.
- Use your full name, including your middle initial or name.
- Write out the name of the degree for which you are a candidate. All PhD candidates must use Doctor of Philosophy. All Master’s degree candidates should use the precise degree name (e.g., Master of Science in Mechanical Engineering).
- Use the month and year in which you defend your thesis.
- This page is counted but not numbered (it counts as page i but should not have a page number).
Copyright Page

- Include a copyright page with the following information: a copyright notice, full legal name of author, and date of publication on file, as shown below. Center the information vertically and horizontally on the page.

© Copyright 2018

Jane S. Jones. All Rights Reserved.

- For more information regarding copyright issues, visit http://www.copyright.gov/
- This page is neither counted nor numbered. If you chose not to add a copyright page, a blank page should be substituted.

Dedications

- The Dedications page is optional.
- The heading Dedications must appear at the top of the page. The heading must be bold, centered, and without punctuation.
- This page is counted and numbered in lowercase Roman numerals.

Acknowledgments

- The Acknowledgments page is optional, but most theses do include a brief statement of thanks or recognition of any special assistance.
- The heading Acknowledgments must appear at the top of the page. The heading must be bold, centered, and without punctuation.
- This page is counted and numbered in lowercase Roman numerals.

Table of Contents

- The Table of Contents should follow closely the sample on page 18.
- The heading Table of Contents must appear at the top of the first page. The heading must be bold, centered, and without punctuation.
- Do not list any sections that precede the Table of Contents (e.g., Dedications, Acknowledgments). Do not list the Table of Contents itself.
- List chapter titles and at least the first or second order subdivisions. Make sure that chapter and section titles are worded exactly as they appear in the body of the thesis.
- Single space each entry, but double space between entries.
- Separate titles from page numbers with right-justified tabs and dot leaders. Do not use periods to separate titles and page numbers.
- These pages are counted and numbered in lowercase Roman numerals.
List of Tables

- The List of Tables should follow closely the sample on page 19.
- The heading List of Tables must appear at the top of the first page. The heading must be bold, centered, and without punctuation.
- List table captions exactly as they appear above the tables in the text. Single-space each entry, but double-space between entries.
- Separate table captions from page numbers with right-justified tabs and dot leaders. Do not use periods to separate captions and page numbers.
- These pages are counted and numbered in lowercase Roman numerals.

List of Figures

- The List of Figures should follow closely the sample on page 20.
- The heading List of Figures must appear at the top of the first page. The heading must be bold, centered, and without punctuation.
- List figure captions exactly as they appear below the figures in the text. Single-space each entry, but double-space between entries.
- Separate figure captions from page numbers with right-justified tabs and dot leaders. Do not use periods to separate captions and page numbers.
- These pages are counted and numbered in lowercase Roman numerals.

Abstract

- The Abstract should follow closely the sample on page 21.
- The abstract is a summary that allows readers to determine the value of reading the full thesis. It should include a statement of the problem, an outline of procedures or methods, and a summary of results and conclusions.
- Master’s thesis abstracts must be 600 words or less.
- Ph.D. dissertation abstracts have no word limit. However, abstracts over 350 words may be truncated by ProQuest in their print indexes.
- The following heading must be centered at the top of the first page:

  Abstract

  Full Title of Dissertation or Thesis

  Author’s Name as it appears on the Dissertation or Thesis

- The text begins four lines below this heading.
- The text must be double spaced. (Note that the heading lines are single spaced.)
- The pages are counted and numbered in lowercase Roman numerals.
Blank Page

- Include a blank page (with no page number) before the first page of the text.
- The blank page is neither numbered nor counted.

Text

- Divide the text into its major parts/chapters/subsections. No fixed arrangement is necessary. The major parts may contain such subjects as introduction, general argument, description of experimental procedures, research methods, discussion, summary, conclusions, recommendations, and other pertinent topics that are necessary for a complete understanding on the part of a sophisticated or professional reader.
- The chapter and section titles should be the same as the headings listed in the Table of Contents.
- The pages are counted and numbered in Arabic numerals.

Note: If your thesis includes a list of nomenclature and symbols, include the list as an appendix.

Headings in Text

- Chapter headings must be bold and centered.
- The chapter number and title must be on the same line, separated by a colon or period, as shown in the example below:

  
  CHAPTER 1: INTRODUCTION

- Headings must not be larger than 12 points.
- Headings must be single spaced.

Footnotes (optional)

- Each footnote cites an authority for statements in the text.
- Number each footnote chronologically in Arabic numerals.
- Place each footnote on the same page on which it appears in the text.
- Separate footnotes from the text with a line. Leave one single-spaced line of space between the line and the first footnote.
- Single space each footnote entry.

Bibliography (or List of References)

- The Bibliography (or List of References) should follow closely the sample on page 22.
- The heading Bibliography (or List of References) must appear at the top of the first page. The heading must be bold, centered, and without punctuation.
- Begin the list of sources four spaces below the heading.
- Single space within each entry, and double space between entries.
• Do not split an entry over two pages. If an entry does not fit completely on one page, place it all on the next page.
• Entries may be in any consistent arrangement (e.g., alphabetical by author, numerical, or chronological) as specified by professional journals standard in your discipline.
• These pages are counted and numbered in Arabic numerals.

Appendices

• If supplementary original data, illustrative material, a detailed derivation of equations, an extensive proof of a theorem, or a quotation too extensive for the body of the thesis are included, they may be presented in appendices. Similar material should be gathered in a single appendix.
• Number the appendices consecutively either alphabetically or numerically (Appendix A, Appendix B... or Appendix 1, Appendix 2...).
• The heading Appendix A (or B, C, 1, 2) and the title of the material must be bold, centered, and without punctuation.
• The appendix material should begin four spaces below the heading.
• List each appendix and its title separately in the Table of Contents.
• The pages are counted and numbered in Arabic numerals.

Note: If your thesis includes a list of nomenclature and symbols, include the list as an appendix.

Vita

• The Vita is a biography of the student written in the third person in either essay or outline form. It should include full name, place and date of birth (optional), country of citizenship (optional), institutions attended, degrees and honors received, titles of publications, teaching and professional experience, and other pertinent data.
• The Vita must be one page or less.
• The heading Vita must appear at the top of the page. The heading must be bold, centered, and without punctuation.
• The Vita text should begin four spaces below the heading.
• List the Vita separately in the Table of Contents.
• The page is counted and numbered in Arabic numerals.

Blank Page

• Include a blank page (with no page number) at the end of the thesis.
• The blank page is neither counted nor numbered.
THESIS FORMAT CHECKLIST

Master’s and doctoral candidates: This checklist is to be used in conjunction with Drexel’s Thesis Manual. The page numbers in parentheses refer to specific parts of the manual. Please make sure you have checked off all items on this list before you submit your theses or dissertation electronically via ProQuest. Final approval on formatting and arrangement should come from your advisor.

ARRANGEMENT (p 7)
☐ Thesis follows the arrangement specified on page 10 of the Thesis Manual.

MARGINS (p. 5)
☐ On portrait-oriented pages, the left margin is 1.5 inches. Right, top, and bottom margins are 1 inch.
☐ On landscape-oriented pages, the top margin is 1.5 inches. Left, right, and bottom margins are 1 inch.

PAGINATION (p. 5)
☐ Page numbers are in upper right-hand corner of page, at least ¾ inch from top.
☐ Preliminary pages (Dedications through Abstract) are numbered using lowercase roman numerals (e.g., ii, iii).
☐ Main text (Chapter 1 through end of thesis) is numbered consecutively using Arabic numerals (e.g., 1,2,3).
☐ Page numbers on landscape-oriented pages should be in portrait orientation.

TITLE PAGE (pp. 7, 17)
☐ Title page follows format shown on page 17 of Thesis Manual.
☐ For master’s degree, subject is given: Master of Science in ____________.
☐ Month and year of defense are given.
☐ The page is counted as “i” but not numbered.
☐ The page includes the Drexel logo on the middle of the bottom of the page

COPYRIGHT OR BLANK PAGE (pp. 2, 8)
☐ Copyright page follows the format shown on page 8 of the Thesis Manual.
☐ If there is no copyright page, a blank page has been inserted.
☐ The page is neither counted nor numbered.

DEDICATIONS (optional) (p. 8)
☐ The heading Dedications appears at the top of the page and is bold and centered.

ACKNOWLEDGMENTS (optional) (p. 8)
☐ The heading Acknowledgments appears at the top of the page and is bold and centered.

TABLE OF CONTENTS (pp. 8, 18)
☐ The heading Table of Contents appears at the top of the page and is bold and centered.
☐ The wording of the entries matches exactly the wording of the headings in the text.
☐ Titles are separated from page numbers with right-justified tabs and dot leaders (not periods).
LIST OF TABLES (pp. 9, 19)
☐ The heading List of Tables appears at the top of the page and is bold and centered.
☐ The wording of the entries matches exactly the wording of the table captions in the text.
☐ Table captions are separated from page numbers with right-justified tabs and dot leaders (not periods).

LIST OF FIGURES (pp. 9, 20)
☐ The heading List of Figures appears at the top of the page and is bold and centered.
☐ The wording of the entries matches exactly the wording of the figure captions in the text.
☐ Figure captions are separated from page numbers with right-justified tabs and dot leaders (not periods).

ABSTRACT (pp. 9, 21)
☐ Master’s abstract is 600 words or less.
☐ Abstract follows the format on page 21 of Thesis Manual.
☐ The heading material is single-spaced.
☐ The abstract text begins four single-spaced lines below heading.
☐ The text is double-spaced.

TEXT (p. 10)
☐ Font size is between 9 and 12 points, including chapter titles.
☐ General text is double-spaced.

HEADINGS IN TEXT (p. 10)
☐ Chapter headings appear at the top of the page and are bold and centered.
☐ In chapter headings, chapter title directly follows chapter number, separated by either a period or a colon and one space.
☐ A consistent style has been followed for each of the different levels of heading.
☐ Headings are single spaced

TABLES (p. 6)
☐ Table captions are directly above the tables, immediately follow the table number, and are single spaced.
☐ Table captions have followed a consistent style (either title case or sentence case*).
☐ There are three single-spaced lines of space above and below each table (above the caption).

FIGURES (p. 6)
☐ Figure captions are beneath the figures, directly follow the figure number, and are single spaced.
☐ Figure captions have followed a consistent style (either title case or sentence case*).
☐ There are three single-spaced lines of space above and below each figure (below the caption).

* This Sentence is in Title Case.
This sentence is in sentence case.
FOOTNOTES (optional) (p. 5)

- Footnotes are separated from text with a line.
- There is one single-spaced line of space between line and first footnote.
- Each footnote entry is single-spaced.

LIST OF REFERENCES (pp. 10)

- Heading is bold and centered.
- There are four single-spaced lines of space below the heading.
- Each entry is single-spaced.
- Double spacing is used between entries. Individual entries are not split over two pages.

APPENDICES (p. 11)

- The heading (e.g., Appendix A) and the title are on the same line, separated by a colon or period.
- Heading is bold and centered.
- The appendix material begins four single-spaced lines below the heading.

VITA (PhD only) (p. 11)

- Fits on one page.
- Includes all information specified on page 11 of the Thesis Manual.

BLANK PAGE (p.11)

- A blank page (not counted nor numbered) has been inserted at the end of the dissertation/thesis.
Sample A: Graduate Thesis/Dissertation Approval Form and Signature Page

GRADUATE THESIS/DISSERTATION APPROVAL FORM AND SIGNATURE PAGE

Instructions: This form must be completed by all master’s and doctoral students with a thesis or dissertation requirement. Please type or print clearly as this form MUST be included as page 1 of your thesis or dissertation via electronic submission to ProQuest. All theses and dissertations must be formatted according to the University and department/program requirements. Reminder: It is the responsibility of the student to submit any/all edits requested by the Examining Committee to the Faculty Mentor or Supervising Professor for final approval and signature via the Graduate Program Completion Form.

Type: □ Master’s Thesis □ PhD/Doctoral Thesis or Dissertation

Thesis or Dissertation Title: ____________________________________________________________

Author’s Name: _________________________________________________________________

Month and Year: _______________________________________________________________

The signatures below certify that this thesis / dissertation (circle one) is complete and approved by the Examining Committee.

Committee Chairperson’s Name: ___________________________________________________

Title: __________________________________________________________

Department: ___________________________________________________________

Institution (if other than Drexel University): _______________________________________

Signature: ____________________________

Committee Member’s Name: _____________________________________________________

Title: __________________________________________________________

Department: ___________________________________________________________

Institution (if other than Drexel University): _______________________________________

Signature: ____________________________

Committee Member’s Name: _____________________________________________________

Title: __________________________________________________________

Department: ___________________________________________________________

Institution (if other than Drexel University): _______________________________________

Signature: ____________________________

Committee Member’s Name: _____________________________________________________

Title: __________________________________________________________

Department: ___________________________________________________________

Institution (if other than Drexel University): _______________________________________

Signature: ____________________________
# Sample B: Graduate Program Completion Form

## GRADUATE PROGRAM COMPLETION FORM

Instructions: This form must be completed and submitted to the Graduate College or Graduate School of Biomedical Science and Professional Studies, as appropriate, by the posted deadline with proof of electronic submission of thesis or dissertation to ProQuest and with other materials as indicated below. Reminders: You must apply for graduation degree applicable in your Drexel学位 by the posted deadline. Please note that you cannot be enrolled in graduate with grades of Incomplete (INC) or No Credit Reported (NCR). Please work with your program to resolve any outstanding work and final grades.

### STUDENT INFORMATION

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
<th>First</th>
<th>Middle</th>
<th>Last</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>College/School</th>
<th>Degree</th>
<th>Specific Degree (e.g., M.S., Ed.D, Ph.D.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-Drexel (Permanent Email Address):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

Please be sure that you mailing address is updated and is correct on your Drexel.edu portal for mailing your diploma and other post-graduation materials.

<table>
<thead>
<tr>
<th>Graduation Term or Semester and Academic Year:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exact Thesis or Dissertation Title:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Are you requesting a Drexel charge?**
- [ ] Yes (Please also select 2-3 year, 1 year, 2 year, 3 year)
- [ ] No

An embargo is a delayed release of your thesis or dissertation via electronic submission to ProQuest. Permission from your Academic Advisor or Dean, as appropriate, is required. On the latest date has and email the request to the University Office of Academic Integrity.

**COMPLETION CHECKLIST**

Please complete the following requirements prior to submitting this form:

- Complete application for degree graduation in DrexelOne for the appropriate quarter/semester and academic year.
- Resolve any grades of Incomplete (INC) or No Grade Reported (NCR).
- Provide proof of online submission of thesis or dissertation to ProQuest (print student contract).
- Send a PDF copy of completed thesis or dissertation to your Supervising Professor or Academic Administrator, as appropriate.
- Obtain final approval from the supervising professor or committee chairperson, as appropriate. On Page 2 of this form to certify that the format and content of your thesis or dissertation are complete and correct, according to University and department/professor requirements.

**PROOF OF DEGREE REQUIREMENTS ONLY: Complete the Survey of Final Degree Requirements and Drexel EDU/EDU Email Service, as appropriate.**

## APPROVAL SIGNATURES

I certify that all information provided is complete and correct.

<table>
<thead>
<tr>
<th>Student Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Printed Name of Academic Advisor (if applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Printed Name of Committee Chairperson</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Printed Name of Faculty Mentor or Supervising Professor (if not the committee chairperson)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Printed Name of Department Head or Program Director:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Printed Name of Division Director (if applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## FINAL STATEMENT

Acquiring all signatures above indicates that all information provided is complete and correct and that you have hereby completed the requirements for your degree. Please submit this completed form to the Graduate College or Graduate School of Biomedical Science and Professional Studies, as appropriate, to be approved and sent to the University Registrar for final degree issuance. You will NOT be cleared for your degree until this form is complete and all program and University requirements have been satisfied.

**Graduate College or Graduate Office (Academic Administrator) Signature**

<table>
<thead>
<tr>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
Coenzyme Fluorescence Responses of Yeast and Hybridoma Cultures to Induced Metabolic Transitions

A Thesis
Submitted to the Faculty
of
Drexel University
by
Steven Anthony Siano
in partial fulfillment of the requirements for the degree
of
Doctor of Philosophy
June 2005

Use official Drexel University logo
Sample D: Table of Contents

These pages are numbered using lowercase Roman numerals.

Table of Contents

LIST OF TABLES .................................................................................................................................................................. iv
LIST OF ILLUSTRATIONS .................................................................................................................................................... v
ABSTRACT ........................................................................................................................................................................... viii
1. BACKGROUND AND LITERATURE SURVEY ..................................................................................................... 1
   1.1 General............................................................................................................................................................................... 1
   1.2 Forced-Convection Vaporization ............................................................................................................................ 2
   1.3 Flow Visualization Studies ....................................................................................................................................... 5
   1.4 Heat Transfer .............................................................................................................................................................. 13
      1.4.1 Forced Convection Surface Boiling .............................................................................................................. 14
      1.4.2 Incomplete Evaporation .................................................................................................................................... 17
2. APPARATUS AND TEST PROCEDURE ............................................................................................................... 32
   2.1 General Flow System ................................................................................................................................................ 32
   2.2 Test Section .................................................................................................................................................................. 36
   2.3 Instrumentation ......................................................................................................................................................... 40
   2.4 Pressure Measurement ........................................................................................................................................... 41
   2.5 Electric Power Measurement ..................................................................................................................................... 44
3. DATA .............................................................................................................................................................................. 49
4. RESULTS ................................................................................................................................................................ ....... 56
   4.1 Heat Transfer Coefficients ..................................................................................................................................... 58
   4.2 Correlations.............................................................................................................................................................. 80
5. CONCLUSIONS AND RECOMMENDATIONS .................................................................................................... 89
LIST OF REFERENCES ..................................................................................................................................................... 98
APPENDIX A: MEASUREMENT ERRORS ......................................................................................................................... 99
VITA ..................................................................................................................................................................................... 105

Last Updated August 2023
Sample E: List of Tables

List of Tables

1. Analysis of Variance of Frequency of Pango Responses on the Training Task (Exp. Group 1) ............................................................................................................................................................................ 38
2. Analysis of Variance of Frequency of Pango Responses on the Training Task (Exp. Group 2) ............................................................................................................................................................................ 39
3. Analysis of Variance of Frequency of Pango Responses on the Training Task (Exp. Group 3) ............................................................................................................................................................................ 40
4. Analysis of Variance of Frequency of Pango Responses on the Training Task (Grade 1) .............. 44
5. Analysis of Variance of Frequency of Pango Responses on the Training Task (Grade 5) .............. 45
6. Analysis of Variance of Frequency of Pango Responses on the Training Task (Grade 8) .............. 46
7. Analysis of Variance of Frequency of Pango Responses on Compounding Task (Exp. Group 1) ............................................................................................................................................................................ 56
8. Analysis of Variance of Frequency of Pango Responses on Compounding Task (Exp. Group 2) ............................................................................................................................................................................ 57
9. Analysis of Variance of Frequency of Pango Responses on Compounding Task (Exp. Group 3) ............................................................................................................................................................................ 58
10. Analysis of Variance of Mean Number of Ss Utilizing Each of the Five Compounding Strategies ............................................................................................................................................................................ 64
11. Number of Ss Using the Same Strategy on Two to Six Probabilistic Compounds ......................... 71
12. Means and Standard Deviations of the Components Associated with the Six Compounds; During Trial Blocks 5 and 6 of the Training Task ............................................................................................................................................................................ 72
13. A1. The Test Anxiety Scale for Children ................................................................................................................................. 110
Sample F: List of Figures

This page is numbered using lower case Roman numerals.

List of Figures

1. Forced Convection Vaporization in a Uniformly Heated Horizontal Tube .............................................. 2
2. Acceleration Pressure Drop Factor, r for Refrigerant 12 .............................................................................. 12
3. Frictional Pressure Drop Factor, for Refrigerant 12 ....................................................................................... 12
4. Data of Schrock and Grossman .............................................................................................................................. 19
5. Data of Bryan and Seibel ............................................................................................................................................. 24
6. Data of Bo Pierre and Altman, Norris, and Staub ............................................................................................ 27
7. Data of Anderson ........................................................................................................................................................... 29
8. Schematic of Test Loop ................................................................................................................................................ 33
9. Details of Heater Chamber Design .......................................................................................................................... 35
10. Thermocouple and Pressure Tap Locations ...................................................................................................... 37
11. Details of Test Section Construction: Conical End Connections and Pressure Tap Construction ............ 39
12. Temperature Measuring Circuit ............................................................................................................................ 42
13. Pressure Measuring Circuit ................................................................................................................................. 43
14. Wall and Refrigerant Temperature Profiles for Run 16 ................................................................................ 52
15. Heat and Transfer Coefficient Profiles for Run 1 ........................................................................................... 57
16. Heat and Transfer Coefficient Profiles for Run 4 ........................................................................................... 58
17. Heat and Transfer Coefficient Profiles for Run 10 .......................................................................................... 59
18. Heat and Transfer Coefficient Profiles for Run 16 ........................................................................................... 60
Sample G: Abstract

These pages are numbered using lowercase Roman numerals.
Note that the heading is single spaced, but the abstract text is double spaced.

Abstract

Coenzyme Fluorescence Responses of Yeast and Hybridoma Cultures to Induced Metabolic Transitions
Steven Anthony Siano
John Q. Supervisor, Ph.D.

Abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text abstract text...
Sample H: List of References

Single space within each entry and double space between entries.

List of References


