Thesis (BMS 580) Formatting Guidelines for Hood College BMS Students*

Organization of the Thesis Document**

The first page of your document is the title page (see sample, page 6). Following this page, the document is organized in two parts: (1) preliminary pages and (2) main body text. Each part contains primary section headings, on separate pages. These headings are centered using uppercase, bold, letters.

Primary Section Headings for Preliminary Pages

- Statement of Use and Copyright (see sample, page 7)
- Dedication (optional page)
- Acknowledgements
- Table of Contents (see sample, page 8)
- Abstract (150 words maximum)
- List of Tables (with first sentence of legend, see sample, page 9)
- List of Figures (with first sentence of legend, see sample, page 10)
- List of Abbreviations (optional page) (see sample, page 11)

Primary Section Headings for Main Body

- Introduction
- Materials and Methods
- Results
- Discussion
- References
- Appendix (optional section)

Basic Settings for Word Processor

- Font type: Times New Roman
- Font size: 12 point (exception, 11 point for page numbering)
- Line Space: Double
- Margins: 1.50 inches left margin, 1.00 inch other three sides
- Justification: Full (exception, References section is left justified)

*Adapted from resources available from the Association of Biology Laboratory Education, Bates College (Department of Biology), and Union College (Department of Biology).

**Consult the BMS 580 “word template” for additional details on organization and formatting requirements. This template is available from the BMS program director and the Graduate School website.
Page Numbering

All numbers are located at the bottom (footer) center of each page using an 11-point font. Preliminary pages are numbered using lower-case Roman numerals. The title page (cover sheet) is counted as page “i” but is not numbered. The main body pages are numbered in Arabic numerals. The first page of the “Introduction” is counted as “1” but is not numbered.

Section Headings

Use no more than three levels of organization: primary headings as described above (centered, uppercase, bold letters), secondary headings (left-hand margin, bold, first letter of each word is uppercase), and tertiary headings (left-hand margin, italics, first letter of each word is uppercase). It is not necessary to have secondary or tertiary headings unless the complexity of the text requires this.

Paragraphs

- Indent the first line of each paragraph 0.50 inches.
- Do not add a space between paragraphs.
- Italicize all Latin words (et al.), including scientific names (Escherichia coli).
- Do not begin sentences with acronyms or abbreviations (“Human immunodeficiency virus is associated with…” not “HIV is associated with…”; “Escherichia coli is used to express…” not “E. coli is used to express…”).
- Hyphenate compounds used as adjectives (130-kDa protein, 10-ml pipette, antibody-based treatments).
- Leave two spaces after the “period” that ends sentences and only one space after colons, semicolons, commas, and other internal punctuation marks.
- If quotation marks are used (note: not a common practice), periods and commas should be placed within closing quotation marks.

Numbers

- Use decimals rather than fractions, except in equations. Decimals not proceeded by a whole number should always be preceded by a zero (0.78).
- Use numerals for numbers greater than nine except when starting a sentence (associated abbreviation should be spelled out as well: “Eleven grams was added to the buffer…” but “After the addition of 11 g to the buffer…”).
- Spell out numbers one through nine except when used with units of measure or time (“6 mm,” “4 years” but “five students,” “eight observations”), or in a series that includes at least one number greater than nine (“1 syringe,” “3 beakers,” and “35 test tubes.” Use commas in numbers of four digits or more (1,000) except in catalog numbers.
Tables and Figures

You have the option to incorporate tables and figures immediately after the first paragraph they are mentioned. Alternatively, you may place tables and figures on a separate page. In all cases, center the table or figure within the page. Tables and figures are numbered consecutively (Arabic numerals) and the numbering is independent (start at Table 1 and Figure 1, etc.).

Table legends are single spaced and are centered at the top of the table. Figure legends are single spaced and centered at the bottom of the figure. In the majority of cases, legends are composed of two or three sentences that summarize and explain the contents of the table or figure. Each legend should be composed of:

- A title sentence – summarizes the results presented in the table or figure, and when possible, should include the variables investigated and the organism studied (for example, “The effects of ethanol and caffeine on the heart rate of Daphnia magna.” Note: it is not acceptable to simply restate the axis labels with a “versus” between the variables.
- Additional sentence(s) – includes further explanatory information, like descriptions of samples used for gel electrophoresis, culture conditions (temperature, media, etc.), sample sizes, and descriptive statistics (where applicable).

The information displayed in tables and figures should not be smaller than a 10-point font nor greater than a 12-point font. See pages 12 and 13, for a sample table and figure, respectively.

References

There are two components for this section, the proper way to cite a reference in the text and the format for the final list of references (your bibliography). You are required to follow the “name-year system” and to employ the Council of Science Editors (CSE) format.

Common examples for citing references in the text:

- If the author’s name is part of the sentence, use the form “Bagni (2002)” and “(Bagni 2002)” if it is not.
- For more than two authors, use the form “Chakiath et al. (2009);” however, include all author names in the actual reference listed in your bibliography.
- List multiple citations in alphabetical order; for example, “(Boyd 2002; Pace-Templeton et al. 1997; Rossio 2009).”
- If you cite two works by the same author, use the form “(Laufer 1998, 2003).”
- If you cite two works by the same author in the same year, use the form “(Hirschhorn 2001a, 2001b).”
The website http://library.osu.edu/help/research-strategies/cite-references/cse#Books provides multiple examples for the CSE formatting of journal articles, books, and internet references. In addition, the following website is a resource to find journal abbreviations: http://images.webofknowledge.com/WOK46/help/WOS/A_abrvjt.html.

Common examples for the list of references:

- **Journal Article**


- **Journal Article - Internet**


- **Book**


- **Book - Internet**


- **Part of Book**


- **Contribution to a Book**

Document Printing and Title Page Signatures

Two copies of the thesis document are required to be submitted by the student to the graduate school by the due date published on the Hood College academic calendar. The minimum paper requirement is a 20-pound bond, 25% rag or cotton-content paper with a “bright white” color and watermark. The first copy is for the Hood College Library, the second copy is for the Department of Biology. Title pages for both of these copies must bear original signatures (in black, ball-point ink) of the adviser, committee members, program director, and dean of the graduate school. Additional copies can be made at the discretion of the student.

Common Symbols and Abbreviations

These symbols and abbreviations are used without spelling the complete term:

<table>
<thead>
<tr>
<th>Term</th>
<th>Symbol or Abbreviation</th>
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<tbody>
<tr>
<td>alpha</td>
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<td>degrees Celsius</td>
<td>°C</td>
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<td>degrees of freedom</td>
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<td>DNA</td>
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<td>et alii (and others)</td>
<td>et al.</td>
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<tr>
<td>figure</td>
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<table>
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<th>Term</th>
<th>Symbol or Abbreviation</th>
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<td>%</td>
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<td>’</td>
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<td>ribonucleic acid</td>
<td>RNA</td>
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<td>s or sec</td>
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<td>volume</td>
<td>vol</td>
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</tbody>
</table>
Sample for Title Page

THIS IS THE BOLD, CAPITALIZED, AND DOUBLE-SPACED TITLE OF A

THESIS TOPIC I HAVE INVESTIGATED

by

Iam A. Hoodgradstudent

B.A. (Hood College) 2004

THESIS

Submitted in partial satisfaction of the requirements

for the degree of

MASTER OF SCIENCE

in

BIOMEDICAL SCIENCE

in the

GRADUATE SCHOOL

of

HOOD COLLEGE

March 2010

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Name, Ph.D.
Committee Member

Name, Ph.D.
Thesis Adviser

Name, Ph.D.
Dean of Graduate School
Sample Page for Copyright Waiver (note: choose one option for your document)

STATEMENT OF USE AND COPYRIGHT WAIVER

I authorize Hood College to lend this thesis, or reproductions of it, in total or part, at the request of other institutions or individuals for the purpose of scholarly research.

or

I do not authorize Hood College to lend this thesis, or reproductions of it, in total or part, at the request of other institutions or individuals for the purpose of scholarly research.
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**LIST OF FIGURES**

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<th>Figure</th>
<th>Description</th>
<th>Page</th>
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<tr>
<td>1</td>
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<td>6</td>
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<td>2</td>
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<td>9</td>
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<td>3</td>
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<td>12</td>
</tr>
<tr>
<td>4</td>
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<td>15</td>
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<tr>
<td>5</td>
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<td>23</td>
</tr>
</tbody>
</table>
Sample Page for List of Abbreviations

LIST OF ABBREVIATIONS

AMV  avian myeloblastosis virus
BSA  bovine serum albumin
cDNA  complementary DNA
EDTA  ethylenediamine tetraacetic acid
ELISA  enzyme-linked immunosorbent assay
GFP  green fluorescent protein
MHC II  major histocompatibility complex class II
PAGE  polyacrylamide gel electrophoresis
PCR  polymerase chain reaction
PME  pectin methylesterase
qPCR  quantitative polymerase chain reaction
SDS  sodium dodecyl sulphate
$T_m$  melting temperature
Table 1. Summary of gene and primer information used for qPCR to validate the microarray analysis.

<table>
<thead>
<tr>
<th>Gene</th>
<th>Function</th>
<th>Forward Primer</th>
<th>Reverse Primer</th>
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<tbody>
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<td>Actb</td>
<td>Regulation of actin cytoskeleton</td>
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<td>DNA replication</td>
<td>TTAAGCTTCCCTGTCT</td>
<td>TCCAGAGTTCAGTCTCCCTATAGC</td>
</tr>
<tr>
<td>Slc39a10</td>
<td>Metal ion transporter</td>
<td>CTACACCGGTACCATA</td>
<td>ACGTCTTACACGTCACTGCACC</td>
</tr>
</tbody>
</table>
Figure 1. The effects of glucose and maltose on fermentation by *Saccharomyces cerevisae*. The volume (mL) of carbon dioxide gas produced by fermentation was measured at 5-minute intervals using a respirometer as described in Materials and Methods. The mean production of carbon dioxide gas (± 1 standard deviation) was based on four samples.