Monmouth University
Honors School

School of Science
Honors Thesis Guidelines

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Introduction

In order to graduate from the Monmouth University Honors School, students must complete the honors thesis program. To begin the process, students will need to have completed 80 credits (with at least 15 credits from his/her major area of study), maintain a minimum 3.5 GPA in his/her major area of study [education majors must achieve 3.5 GPA in their academic area of concentration], and a 3.3 GPA overall. These standards are designed to ensure that honors students are capable of handling the necessary requirements and have a proven history of academic excellence at Monmouth University.

After completing 80 credits at Monmouth University (and 15 within the major), honors school students will have their academic careers evaluated by the Honors School to determine if they have met the minimum 3.5 GPA requirement. If after 80 credits (and 15 from within their major) they have been unable to achieve these requirements, students will be dismissed from the Honors School.

Detailed information on all honors school requirements is available on the Honors School web site at http://www.monmouth.edu/honors.

The Honors Thesis Process for the School of Science

At the beginning of your junior year, the Honors School will schedule a meeting of the Honors School Dean with you and other students in your major. School of Science Assistant Dean Tiedemann will also attend this meeting. For School of Science students, Assistant Dean Tiedemann will function as your overall Honors Thesis Advisor. He is responsible for overseeing the honors thesis process.

At this meeting, the Dean of the Honors School and Assistant Dean Tiedemann will review the honors thesis process with you, explain how to develop a thesis topic, and assist you with selecting appropriate thesis advisors.

In the semester before you begin preparing your thesis proposal, the Honors School will also schedule Thesis Proposal Information Seminars to review the process and to provide additional guidance including how you should fill out the appropriate Honors Thesis Proposal and Honors Thesis application forms.

As an honors school student, you complete your thesis requirement by taking two courses:

- Thesis Proposal (HO 498), a 2 credit course; and
- Thesis (HO 499), a 2 credit course.
The typical timeline for completing this process for School of Science students is outlined below:

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>Fall</th>
<th>Semester</th>
<th>Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior Year</td>
<td>✔ Consult with Dean and thesis advisors</td>
<td>✔ Register for HO498</td>
<td>✔ Continue research</td>
</tr>
<tr>
<td></td>
<td>✔ Select an Honors Thesis topic</td>
<td>✔ Prepare Honors Thesis Proposal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✔ Begin literature review &amp; proposal preparation</td>
<td>✔ Begin research</td>
<td></td>
</tr>
<tr>
<td>Senior Year</td>
<td>✔ Continue research</td>
<td>✔ Register for HO 499</td>
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<tr>
<td></td>
<td></td>
<td>✔ Complete research</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>✔ Prepare Honors Thesis</td>
<td></td>
</tr>
</tbody>
</table>

**Selecting an Honors Thesis Topic**

In order to select an appropriate honors thesis topic you should consult with your academic advisor, research mentors within your major, or Assistant Dean Tiedemann, the School of Science Honors Thesis Advisor. Ideally an Honors Thesis will be a well-researched study that makes an original, discrete contribution to knowledge within your discipline.

If you plan to work with vertebrate animal subjects in your research, even if you are simply conducting a survey, you must submit your plan to the university Institutional Animal Care and Use Committee (IACUC) for review and approval. IACUC was created to monitor and oversee research activity conducted at, or sponsored by, Monmouth University that involves vertebrate laboratory animals. Your Chief Advisor and the Honors Office can help you in this process, but be sure to seek this approval in a timely manner to make sure that you will have enough time to complete your research.


**Selecting Thesis Advisors**

Once you have developed an appropriate honors thesis topic, the next step is to select thesis advisors. During the course of your thesis you will work in collaboration with a Chief Advisor in your major (also known as the First Reader in some academic departments), as well as a Secondary Advisor (Second Reader). You will choose your own Chief Advisor and Second Reader with the approval of the Dean of the Honors School.

Pick faculty you feel comfortable working with and you feel are comfortable working with you. If you are having trouble doing this, please consult with Reenie Menditto, the Director of Student
Standards, Advising and Services in the Honors School, the Dean of the Honors School, or Assistant Dean Tiedemann.

Your Chief Advisor should be a faculty person in your major knowledgeable in the area you wish to conduct research in. Your Chief Adviser helps guide you in developing the scope of your research and your experimental approach. Your Chief Advisor will also recommend particular references, methods manuals, and other pertinent publications and literature for you to consult. You are responsible for reading extensively on the topic you have selected, discussing the readings with your Chief Advisor, and focusing on ways the material can be refined to support your project.

Your Second Reader can be outside your major but it must be someone in the School of Science or an external collaborator who is familiar with your research area.

Both the Chief Advisor and the Second Reader will support you as you proceed with your research and writing, provide advice on your research topic, guide you in developing and conducting your research, identify appropriate reference materials, as well as review and comment on your proposal and thesis.

**Advisor Meetings**

As early as possible in the semesters that you are registered for Thesis Proposal (HO 498) and Thesis (HO 499), preferably during the first week, but no later than the end of the second week, arrange to meet jointly with your Chief Advisor and Second Reader. At this meeting, the three of you will agree on the direction of your thesis research and complete the Thesis Proposal Application Form (HO 498) or the Thesis Application Form (HO 499). If you are unable to arrange a joint meeting with your advisors because of scheduling issues, ask your advisors to consult with one another to ensure that they are in agreement on the direction of your thesis.

After the initial meeting with your Chief Advisor and Second Reader, meet with the School of Science Honors Thesis Advisor (Assistant Dean Tiedemann) to discuss the plans you made with them. Ideally this meeting should also take place during the first week of the semester, allowing an early start on your Thesis Proposal (HO 498) or your Thesis (HO 499).

After your initial meetings at the beginning of the semester, you must meet with your Chief Advisor at least once every two weeks throughout the semester. At these meetings discuss your progress and any problems that you might have encountered, including issues about availability and reliability of reference materials. Your Chief Advisor will help you focus on your topic and serve as a sounding board for your ideas.

You must also meet with your Second Reader and School of Science Honors Thesis Advisor at least two additional times during the semester: by the beginning of the 9th week then by the beginning of the 12th week of the semester. Your Second Reader and Honors Advisor can also help you in developing your understanding of material and focusing on an achievable research goal. If possible, meet with them more often than the prescribed minimum.
At all advisor meetings you need to demonstrate a developing research focus, accompanied by a growing corpus of notes and other materials to support your research project. Be cognizant of methodological issues: do the materials you are collecting meet the goals of your research? Bring your notes and other pertinent information (e.g., data, lab notebook) to each of your Advisor meetings and be ready to discuss any issues or problems you have encountered.

Remember, your Advisors are there to help you. Use them well. Come prepared when you meet with them. Consider taking one of your advisors to lunch through the Honors “Take a Professor to Lunch” program, subsidized by the Honors School. Check with the Honors Office about this.

A Note on Thesis Proposal and Thesis Grades:

Honors Thesis Proposals must receive a letter grade of B in order to register for the Honors Thesis, HO 499. If proposals fail to receive a grade of B or higher, students will be dismissed from the Honors School and will be unable to re-register for HO 498H.

Honors Theses (HO 499) must also receive a grade of B in order to graduate from the Honors School.
Preparing the Honors Thesis Proposal

To register for the Honors Thesis Proposal (HO 498) complete the Honors Thesis Proposal Application Form which can be found as a link on the Honors School home page or at http://www.monmouth.edu/uploadedFiles/Content/Honors_School/HO498HonorsThesisProposalApplication.pdf

Bring the completed Honors Thesis Proposal Application Form to the Honors Office for approval by the Honors School Dean. This must be done no later than the end of the third week of the semester. The Honors School Office will forward the completed application to the Office of Registration and Records for registration.

Unless your Chief Advisor and Second Reader direct otherwise, you must provide them with at least two drafts of your proposal during the semester. Creating the drafts will help you focus your ideas and will allow your Advisors to provide feedback. As you continue your research, incorporate the comments of your advisors to improve your work.

Typically, the first proposal draft is due by the beginning of the 9th week of the semester. Provide a hard copy to all advisors: Chief Advisor, Second Reader, and School of Science Honors Thesis Advisor.

The second draft is subsequently due at least by the beginning of 12th week of classes. Again, provide a hard copy to all advisors: Chief Advisor, Second Reader, and School of Science Honors Thesis Advisor.

Your Chief Advisor and Second Reader may decide on a different process and deadlines for submitting drafts, so be sure to discuss this with them. Failure to submit drafts could affect your grade, so be sure to comply with your advisors’ decisions concerning drafts.

Your final proposal is due by the last day of classes or on the day specified by your Chief Advisor. Provide a hard copy to all advisors: Chief Advisor, Second Reader, and Honors Advisor and an email attachment to Reenie Menditto at imenditt@monmouth.edu.

The responsibility for meeting with your advisors is yours, not that of the faculty. Consequently, your Chief Advisor, Second Reader, and Honors Advisor will assess not only your work, but also your reliability in meeting with them and providing them with drafts of your work, so be sure to fulfill all your obligations to them.
Background

Begin the background section with a brief introductory overview of the research topic being considered.

The background section describes the state of knowledge that gave rise to the question(s) examined by the research and should explain the significance of the proposed work. This section demonstrates your complete mastery of the relevant literature. Discuss this literature in detail with proper citations. Cite references directly in the text by author and year.

The background section should lead you up to a clear, concise statement summarizing the problem or research question(s) you propose to investigate.

Objectives

Clearly state your hypothesis and articulate the goals and objectives of the proposed research; i.e., what specific question(s) will you ask?

Project Description

Materials and Methods –

Describe the geographic location of the study area if appropriate (provide a map in figure form).

Describe the research design and how the results will be analyzed.

Describe the methodology to be used in the proposed study and explain the rationale behind these methodological choices. Use subheadings as appropriate.
Expected Outcomes –

Briefly discuss what you hope to accomplish and how this relates to your stated objective.

Project Schedule –

Describe the major tasks and milestones for task completion. The project schedule can be summarized in a simple table as below:

<table>
<thead>
<tr>
<th>Task</th>
<th>Timeframe</th>
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**Literature Cited**

The literature cited section gives the full citations for each source cited in the proposal.

Notes on literature cited formats:

Unless otherwise specified by your Chief Advisor, literature cited sections should be prepared according to guidelines outlined below.

Biology majors –

The literature cited section should be prepared according to guidelines contained in *A Short Guide to Writing About Biology* (Jan A. Pechenick).

Chemistry majors –

The literature cited section should be prepared according to guidelines contained in *The ACS Style Guide: Effective Communication of Scientific Information* (Anne M. Coghill and Lorrin R. Garson, ed.).

Computer Science and Software Engineering majors – The literature cited section should be prepared according to guidelines prescribed by IEEE, ACM or AAAI as prescribed by your advisor.

Mathematics majors – The literature cited section should be prepared according to guidelines contained in *MLA Style Manual and Guide to Scholarly Publishing* or the *Publication Manual of the American Psychological Association (APA)* or another acceptable format as prescribed by your advisor.
Preparing the Honors Thesis

To register for the Honors Thesis (HO 499) complete the Honors Thesis Application Form which can be found as a link on the Honors School home page or at http://www.monmouth.edu/uploadedFiles/Content/Honors_School/honors/School%20of%20Science%20Guidelines.pdf

Bring the completed Honors Thesis Application Form to the Honors Office for approval by the Honors School Dean. This must be done no later than the end of the third week of the semester. The Honors School Office will forward the completed application to the Office of Registration and Records for registration.

Unless your Chief Advisor and Second Reader direct otherwise, you must provide them with at least two drafts of your thesis during the semester. Creating the drafts will help you focus your ideas and writing and will allow your Advisors to provide feedback. As you continue writing your thesis, incorporate the comments of your advisors to improve your final product.

Typically, the first draft of your thesis is due by the beginning of the 9th week of the semester. Provide a hard copy to all advisors: Chief Advisor, Second Reader, and School of Science Honors Thesis Advisor.

The second draft is subsequently due at least by the beginning of 12th week of classes. Again, provide a hard copy to all advisors: Chief Advisor, Second Reader, and School of Science Honors Thesis Advisor.

Your Chief Advisor and Second Rader may decide on a different process and deadlines for submitting drafts, so be sure to discuss this with them. Failure to submit drafts could affect your grade, so be sure to comply with your advisors’ decisions concerning drafts.

Your final thesis is due to all advisors and to the Honors School office two days before the Honors School Research Conference held at the end of the semester, which is where you will present your project. Provide a hard copy to all advisors: Chief Advisor, Second Reader, and Honors Advisor and an email attachment to Reenie Menditto at imenditt@monmouth.edu.

The responsibility for meeting with your advisors is yours, not that of the faculty. Consequently, your Chief Advisor, Second Reader, and Honors Advisor will assess not only your work, but also your reliability in meeting with them and providing them with drafts of your work, so be sure to fulfill all your obligations to them.
School of Science
Honors Thesis Format

Thesis title

Your Name
Your Department

Date

Advisor Names:

Chief Advisor
Second Reader
Honors Advisor

Abstract

In the Abstract, briefly summarize the problem addressed, why the problem was addressed, your approach to the problem, and any major findings and conclusions of the study. The abstract should be no longer than 2-3 paragraphs in length.

Background

Begin the background section with a brief introductory overview of the research topic being considered.

The background section describes the state of knowledge that gave rise to the question(s) examined by the research and should explain the significance of the proposed work. This section demonstrates your complete mastery of the relevant literature. Discuss this literature in detail with proper citations. Cite references directly in the text by author and year.

The background section should lead you up to a clear, concise statement summarizing the problem or research question(s) you propose to investigate.

Objectives

Clearly state your hypothesis and articulate the goals and objectives of the proposed research; i.e., what specific question(s) did you address?

Materials and Methods

Describe the research design and how the results were analyzed.
Describe the methodology used in the proposed study and explain the rationale behind these methodological choices. Discuss any additions, changes, or refinement of methodology from that contained in the proposal. Use subheadings as appropriate.

**Results**

The results section presents your data and summarizes your observations and findings. This section contains tables and figures that summarize your findings and reveal any trends you have found. Avoid interpreting the data in this section.

**Discussion**

The discussion section provides the interpretation of your results:

- How do your results relate to the objectives of the study?
- How do your results relate to the results to your expected outcome stated in your proposal?
- How do your results relate to the results that might have been expected from background information contained in the literature?
- Do your results agree with your hypothesis or argue against it?

**Conclusion**

Briefly discuss what has been learned, how this contributes knowledge to the field, any implications or applications of this information. You may also wish to discuss the implications of your findings related to any new hypotheses that might now be formulated and tested with further research as a result of your work.

**Literature Cited**

The literature cited section gives the full citations for each source cited in the proposal.

Notes on literature cited formats:

Unless otherwise specified by your Chief Advisor, literature cited sections should be prepared according to guidelines outlined below.

Biology majors –

The literature cited section should be prepared according to guidelines contained in *A Short Guide to Writing About Biology* (Jan A. Pechenick).

Chemistry majors –

The literature cited section should be prepared according to guidelines contained in *The ACS...*
Computer Science and Software Engineering majors – The literature cited section should be prepared according to guidelines prescribed by IEEE, ACM or AAAI as prescribed by your advisor.

Mathematics majors – The literature cited section should be prepared according to guidelines contained in *MLA Style Manual and Guide to Scholarly Publishing* or the *Publication Manual of the American Psychological Association (APA)* or another acceptable format as prescribed by your advisor.
Attachment A

**Honors Thesis Proposal**

**Information Checklist**

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**Your Name**

**Thesis Title**

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You are responsible for arranging all advisor meetings. Please bring this checklist to those meetings and fill out the dates:

I. At least by end of second week of semester, arrange to meet with your three advisors to discuss your research, writing, and timetable. Provide their names and meeting dates:

1. [Chief Advisor (Name and meeting date)]
2. [Second Reader (Name and meeting date)]
3. [Honors Advisor (Name and meeting date)]

II. After your initial meeting, arrange to meet with your Chief Advisor at least every other week. Provide the meeting dates at the time of your meetings:


III. After your initial meeting with your Second Reader and Honors Advisor, be sure to meet with them at least twice more: by the 9th week of the semester and by the 12th week. Provide them with drafts of your work, as well as this checklist:

<table>
<thead>
<tr>
<th>Second Reader</th>
<th>Midterm meeting</th>
<th>Final Meeting</th>
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<tbody>
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<tr>
<td>Honors Advisor</td>
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</table>

IV. Unless directed otherwise by your advisors, submit two preliminary drafts of the proposal:
- one by the beginning of the 9th week
- one by the 12th week of the semester
- failure to submit drafts could affect your grade

V. Unless directed otherwise, submit your Final Thesis Proposal by the last day of classes to all advisors in hard copy and an email attachment to Reenie Menditto in the Honors office.
Appendix B

Honors Thesis
Information Checklist

________________________________________  __________________________________
Your Name                                                                 Thesis Title

You are responsible for arranging all advisor meetings. Please bring this checklist to those meetings and fill out the dates:

I. At least by end of second week of semester, arrange to meet with your three advisors to discuss your research, writing, and timetable. Provide their names and meeting dates:

1. ____________________________________________
   Chief Advisor (Name and meeting date)

2. ____________________________________________
   Second Reader (Name and meeting date)

3. ____________________________________________
   Honors Advisor (Name and meeting date)

II. After your initial meeting, arrange to meet with your Chief Advisor at least every other week. Provide the meeting dates at the time of your meetings:

1. ______  2. ______ 3. _____  4. _____  5. _____  6. _____  7. _____  8. ______ 

III. After your initial meeting with your Second Reader and Honors Advisor, be sure to meet with them at least twice more: by the 9th week of the semester and by the 12th week. Provide them with drafts of your work, as well as this checklist:

   Second Reader               Midterm meeting              Final Meeting
   Honors Advisor              ________________              __________

IV. By the beginning of the 9th week of the semester submit a first draft of the thesis to all advisors.

V. By the beginning of the 12th week of the semester:
   - Submit a second draft of the thesis to all advisors
   - Register for Honors School Research Conference
   - Provide an Abstract (150-200 words) and page or less of Acknowledgements to all advisors and to Reenie Mendito via email

VI. The final copy of the thesis is due to all advisors and to Honors School office two days before the Honors School Research Conference

VII. All students present their projects at Honors School Research Conference