

Dickinson College
Department of Mathematics and Computer Science

Requirements for Departmental Honors

Departmental honors is the highest distinction that the Department can award to a Major. Majors who receive departmental honors will be those who demonstrate a broad mastery of the discipline as well as an ability to complete and present high quality research. A broad mastery of the discipline is demonstrated by a GPA of 3.40 or higher in all courses related to the major. The ability to complete high quality research is demonstrated by the completion of a yearlong research project. This project will be characterized by an independent and in-depth study of an advanced topic including a literature search, reading of original sources and a novel formulation of results. Finally, the ability to present such research is demonstrated by the preparation of a thesis, a public presentation and a successful defense of the work to the department faculty.

Getting Started:

If you are a major interested in pursuing departmental honors you should study this document carefully and begin talking to the faculty about possible research areas no later than spring break of your junior year. To be eligible to pursue departmental honors, you should identify both a research area and a research advisor by the end of your junior year. You will then be expected, under the direction of your research advisor, to complete all necessary background reading during the summer between your junior and senior years.

As you begin to think about research areas, keep in mind that not every faculty member is an expert in every research area. Thus, there is no guarantee that a particular faculty member will be willing or even able to advise research in your area of interest. It is also possible that there is no faculty member who is willing or able to advise research in some areas. However, most faculty have a variety of interests and if you are flexible it is likely that you will be able to find an area of common interest.

Requirements:

As described above, to receive departmental honors you must maintain a GPA of 3.40 in the major and must complete a yearlong research project resulting in a thesis, a public presentation and a successful defense. Each of these requirements and the criteria for their evaluation are discussed in more detail below.

The Grade Point Average:

If you wish to pursue departmental honors you must, at the end of your junior year, have a GPA of at least 3.40 in all courses related to the major. In addition, to actually receive departmental honors you must graduate with a GPA of at least 3.40 in all courses related to the major. Under exceptional circumstances a Major may petition the department for permission to pursue honors with a GPA below 3.40 in all courses related to the major.

The Research:

To receive departmental honors you must complete a yearlong research project under the direction of a faculty advisor. The role of your faculty advisor will be to serve as a resource in identifying appropriate literature, formulating the problem and precisely defining the research project to be undertaken. Note that projects that merely survey the existing literature or implement large application programs are not considered sufficient for departmental honors. The work associated with your research project will typically be conducted during your senior year. To reserve adequate time for this project you will take a minimum of one independent research credit each semester. In Computer Science, the senior seminar may be used in place of these independent research credits.

The Honors Thesis:

The honors thesis describes your research and will serve to permanently document your contribution to the body of knowledge in your research area. As such, bound copies of your thesis will be kept in both the college and the department libraries. In addition, the department will also present you with a bound copy for your personal library. Your honors thesis will also be the primary means by which the department faculty will judge your work as you are considered for departmental honors. Your thesis will be evaluated based on the following criteria:

- How precisely it identifies the problem that your research addresses.
- How fully it motivates your research.
- How clearly it communicates what you have accomplished.
- How well it assesses the significance of what you have accomplished.

Additional information about the honors thesis can be found in the Honors Thesis Guide, which can be obtained from your research advisor.

The Public Presentation:

At the conclusion of your research project, you must give a public presentation of your thesis. Your presentation will be expected to last no more than 40 minutes and will be followed by a brief question and answer session. Your public presentation will be held on campus and will be attended by your fellow students and the department faculty. The broader college community will also be invited to attend. Your presentation will be evaluated by how effectively it communicates, to an audience of your peers, what you have done, why you have done it, what you have found and the significance of those findings. While this is the only presentation required for departmental honors, it is likely that your research advisor will also encourage you to present your work at a professional conference.

The Defense:

The defense of your thesis will occur immediately following your public presentation. The defense will be a private question and answer session attended by your Thesis Committee and the department faculty. The quality of your defense will be judged by the accuracy, clarity and completeness with which you respond to faculty questions. Following the defense, the faculty

will meet to discuss the totality of your work and vote on the awarding of departmental honors. You will be informed of the result of this vote as soon as it has taken place.

Thesis Committee:

Your thesis committee will be constituted by your research advisor and at least two additional members. Typically, these two members will be other faculty from the College who have knowledge of and interest in your research area. However, with the approval of your research advisor, one member of your committee may be someone from outside the College who is able to assess your work. Outside committee members are required to attend your public presentation and defense.

Deadlines:

To be considered as a candidate for departmental honors you will need to meet each of the deadlines described below. While these are the standard deadlines your research advisor, in consultation with the department may be able to grant exceptions and extensions in unique circumstances. Within two weeks of each deadline you will receive feedback, through your research advisor, regarding your progress toward departmental honors. If deficiencies exist in the progress or quality of your work you may be asked to meet additional intermediate deadlines. Failure to rectify the deficiencies in your work by any intermediate deadline may result in your removal as a candidate for departmental honors. In addition, your research advisor may adjust these deadlines and/or require you to meet intermediate deadlines for things such as preliminary results and rough drafts. Consistent failure in meeting deadlines established by your research advisor will result in your removal as a candidate for departmental honors.

1. *By the end of classes in your junior year:* Declare your intent to pursue departmental honors by submitting to the faculty a 1-2 page Statement of Intent* outlining your area of research.
2. *By the Monday of the fourth week of class in your senior year:* Submit a Formal Research Proposal* posing and justifying your research question and detailing the work you will perform during your senior year.
3. *By the first Monday in December in your senior year:* Form a thesis committee and submit a Research Report* to your committee.
4. *By the Friday after spring break in your senior year:* Submit a complete and polished draft of your Honors Thesis* to your committee.
5. *By one week prior to your Public Presentation and Defense:* Submit the final draft of your Honors Thesis* to your committee.
6. *By the end of classes in your senior year:* Give the Public Presentation and Defense of your thesis.
7. *By the end of finals in your senior year:* Submit your completed Honors Thesis* to your research advisor.

* See the Honors Thesis Guide for specific information about the required content and format of this document.