

Requirements for earning Honors in Geology

Approved by the faculty on May 13, 2015

Purpose: The following document outlines the requirements and process for earning Honors in Geology.

1. GPA requirement: Students must have a major GPA of 3.5 or higher at the end of their junior year or the end of the semester before starting the honors thesis project.
2. Course-work requirement: At least 6 credit hours of GE483/484 earned during the last academic year the student is in residence at Colby.
3. Thesis requirement: Students must complete a significant original research project and produce an in-depth thesis detailing their work (see section 7). The thesis must be approved by a faculty committee (see section 6). Theses that do not meet the criteria outlined in section 7.1 will not earn the honors distinction.
4. Requirements specific to individual advisors: Individual advisors may have additional requirements for grades earned in specific courses, course work, previous research experience, and/or field or laboratory work completed during the summer or the January term. Students should begin consulting with prospective advisors during their junior year to ensure they meet these requirements.
5. Timeline for progression
 - 5.1. Year before thesis research begins: Students wishing to undertake an honors thesis should approach their prospective thesis advisor during their junior year. Most advisors expect students to start consulting with them and planning the thesis research by the start of the spring term.
 - 5.2. First semester: The following must be completed during the first semester as a thesis student (typically the fall of the senior year). Deviations of more than one week should raise significant questions about whether or not the project will reach acceptable completion.
 - All students should enroll in no less than 2 credit hours of GE491 at the start of the first term. The advisor and committee will decide if the student has made acceptable progress on their research and the thesis at the end of the first term. If progress is acceptable, the GE491 credits will be retroactively converted to GE483 credits.
 - The committee should be established during the first full week of the term (see section 6).
 - A short proposal outlining the project is due to the committee by the 3rd week of the term. This should include a timeline for data collection, analyses, and draft delivery that the student is obliged to keep. Advisors should read and approve this proposal before it is submitted to the committee.
 - Complete drafts of the introduction, background, and methods sections are due to the advisor by the 9th week of the term (see section 7.2).
 - Polished drafts of the introduction, background, and methods sections are due to the committee by the 11th week of the term. These must be approved before the end of the final exam period. If the student is unable to produce acceptable introduction, background, and methods sections, they will earn credit for GE491, but will not earn credit for GE483 and cannot enroll in GE484 the following term. It is understood that

the methods section might evolve as more data are collected and analyses are conducted.

5.3. Second semester: The following deadlines must be met during the second term. If the thesis deadlines are not met, the advisor and the committee are not obligated to read the thesis on short notice, and the student may not earn the honors distinction.

- Defense date should be set by the 4th week of the term.
- A draft of the complete thesis is due to the adviser for revision and approval prior to spring break. Sooner is preferable. Complete thesis drafts include all text, figures, figure captions, appendices, and references. The advisor, at their discretion, may refuse approval of an incomplete thesis.
- A polished draft of the complete thesis approved by the advisor is due to the committee at least 7 days prior to the defense date. Sooner is preferable.
- The student must complete the public and private defense (see section 8) 2 weeks before the end of classes.
- All post-defense revisions requested by the committee must be completed and approved by the adviser and/or the committee before senior grades are due or by any earlier deadline set by the committee.

6. Committee: The student is responsible for assembling the committee. The committee should consist of at least three members, and must include at least two Geology Department faculty. Members will include (a) an advisor who oversees the scientific design and implementation of the research question, and (b) two or more readers who independently evaluate the final product and the defense. The advisor may be a scientist outside of Colby. In such case, one of the Colby Geology Department readers must serve as a secondary advisor to oversee the progression of the research and the thesis.

7. The thesis

7.1. Overview: A successful Geology honors thesis will represent a significant body of scientific work of interest to specialists in the greater geologic community. Data will be of publishable quality, and assumptions and limitations of methods used to collect the data will be well explained and taken into account. Analyses and interpretations will be well grounded in existing theory or reasonable, well-supported explanations for why interpretations deviate from the existing paradigm must be given. Writing and figures will be of near-publishable quality. In keeping with the rigorous application of the scientific method, projects that fail to reject a null hypothesis or projects that rigorously test and repeat existing analyses and conclusions are just as acceptable as those that make exciting new discoveries. The honors distinction is not granted based on the amount of work completed by the student, but on their independent assimilation of the material, understanding of the theory behind the methods used, and well-above-average grasp of the scientific method as it applies to the geosciences. To this end, students undertaking honors-thesis projects are expected to be self directed and self motivated.

7.2. Formatting: The text, references, and figures must use a standard journal format specified by the advisor. The text should use 12-point Times or Times New Roman font. All pages must have one-inch margins. Except for the first four pages described in section 7.6, all pages must be numbered, and page numbering must be continuous. The final document must be saved as a single PDF file. Special exceptions may be made for documents that require embedded video or other non-standard content.

- 7.3. Content: All theses should contain the following sections. Subsections will be needed for many topics. Figures must be included where appropriate. Students should use journal articles in their subfield as models for the content of these sections.
- 7.3.1. Abstract of 250 words or less.
 - 7.3.2. Clear introduction that introduces the research question and succinctly places it into a broader context.
 - 7.3.3. Background section that reviews relevant background material for the research question including regional geologic setting for field-based case studies and studies of local interest, the state-of-the-art understanding of the process for process-oriented studies, the relevant global conditions for event-oriented studies, and/or any other material the advisor and committee specify.
 - 7.3.4. Methods section that outlines the methods used to collect, process, and interpret data and/or the experimental design for experimental studies.
 - 7.3.5. One or more data/results section(s) that systematically describes all data collected and/or all experimental results.
 - 7.3.6. Discussion/interpretations section or sections that integrates all of the data, analyzes them within the relevant scientific paradigm, presents scientifically reasonable interpretations, and integrates the results and interpretations into the broader context created in the background section.
 - 7.3.7. Conclusions section that highlights the primary conclusions of the study.
 - 7.3.8. References cited: All theses must include appropriate in-text citations and a references-cited list. In-text citations and the references cited list should follow the journal format specified by the advisor. All references cited in the text must be in the references cited list, and all references in the list must be cited in the text.
- 7.4. Figures:
- 7.4.1. All figures should be neatly drafted using appropriate digital design software (Adobe Illustrator, Corel Draw, ArcGIS, etc.).
 - 7.4.2. All figures must be referred to in the text and must have appropriate captions.
 - 7.4.3. Figures must be numbered in the order they appear in the text. Figure numbering should follow the same journal format as the text.
 - 7.4.4. Figure formatting should follow the same journal style as the text.
- 7.5. Appendices: Theses may include as many appendices as needed. These typically include such information as sample and field localities given in UTM or latitude-longitude coordinates, detailed descriptions of analytical or experimental procedures, exhaustive data tables, and instructions written for future workers. All appendices should be sequentially numbered in the order they are referenced in the text.
- 7.6. Front matter: Theses must contain the following four pages at the front of the document
- Title page with no page number (follow the format on page 5)
 - Signature page with no page number (follow the format on page 6)
 - Abstract page with page number *i*
 - Acknowledgements with page number *ii*

8. Thesis defense

- 8.1. Scheduling: The defense should take place 2 weeks before end of classes. The student is responsible for scheduling the defense. This includes coordinating with their committee to ensure that all members are available for the defense. If the student fails to coordinate with all committee members, and their committee cannot meet for the defense, they will not earn the honors distinction.
 - 8.2. Defense format: The defense shall consist of a ~20-minute public presentation followed by an open question-and-answer period. Following the public presentation, the student shall meet in private with their committee for more in-depth questioning. Public presentations may take place as part of an honors banquet, as a regularly scheduled Geology Seminar, or as a special seminar. All presentations must be advertised at least one week in advance. Students should coordinate the public defense with their advisor and the Departmental Administrative Assistant.
 - 8.3. Final corrections: After the defense, the committee may require corrections, additions, or changes to the thesis. Students are typically given one to two weeks to make these final changes. Committee members must have the opportunity to review and approve any corrections, additions, or changes they require. Readers may also rely on the thesis advisor to review corrections, additions, or changes.
9. Final approval and submission to the library: Once the committee approves the final version of the thesis, the student must submit the document to the Colby Library as a single PDF file. As of 2015, submission was through the Libraries digital commons page, and the Library maintained a Moodle page with instructions for thesis submission. The final version must be accepted by the Library before senior grades are due. The committee or individual committee members may also request bound paper copies of the final document. It is the student's responsibility to work with the Departmental Administrative Assistant during normal business hours to produce any required paper copies.
 10. Data archiving and final cleanup: Students will not earn credit for the final semester of GE483/484 (and hence will not graduate with Honors in Geology) until their data, samples, and working documents are satisfactorily archived, and any laboratories and equipment they used are properly cleaned and stored. The advisor should receive organized copies of all field and lab notes, all digital images and digital data files produced throughout the study, digital copies of all figures in an editable format, and a digital copy of all thesis text in an editable format. Additional specific archiving requirements may be set by the advisor.

TITLE OF THE THESIS

Student's Name

A thesis submitted to the Faculty of the Geology
Department of Colby College in fulfillment of the
requirements for Honors in Geology

Example title page

Waterville, Maine

Month, Year

TITLE OF THE THESIS

Except where reference is made to the work of others, the work described in this thesis is my own or was completed in collaboration with my advisory committee

Student's Name

Example signature page

Certificate of Approval

Space for signature

Dr. Thesis Advisor
Full title
Institutional affiliation

Space for signature

Dr. Reader Alpha
Full title
Institutional affiliation

Space for signature

Dr. Reader Beta
Full title
Institutional affiliation

Space for signature

Dr. Reader Omega
Full title
Institutional affiliation