ENVIRONMENTAL STUDIES - DOCTOR OF PHILOSOPHY (PHD)

The Environmental Studies graduate program at CU Boulder provides in-depth, interdisciplinary training for students interested in making contributions to the understanding of various social and environmental systems, and to the solving of environmental problems. The program is flexibly structured, with the goal of supporting individual student interests and providing them with the ability to seek the best training possible for these interests.

The PhD degree is a research degree, involving the production of a major piece of original research (the dissertation). Students within the program conduct research in a variety of environmental fields, usually working closely with one or more faculty advisors and committee members.

While a student's research project shapes much of their graduate career, course work, colloquia and other activities are also key parts of the graduate experience. This is particularly important in ENVS as this all provides the breadth of knowledge that is key for those seeking to contribute to environmental research and management.

Among the knowledge and skills that we seek to provide to every student are:

- the ability to evaluate policy goals in the context of competing societal objectives
- fundamental knowledge of the relevant environmental sciences to be intelligent users of scientific information
- the ability to integrate knowledge from multiple disciplines in the context of complex environmental issues
- an understanding of the local, state, and federal decision processes that shape environmental issues
- the ability to think critically, creatively, and holistically about environmental issues
- the ability to work in interdisciplinary teams
- skill in communication with diverse audiences

For more information, visit the program's PhD page (http://www.colorado.edu/envs/graduate-students/ms-phd-programs/phd) webpage.

Requirements

Required Courses

The PhD requires completion of 32 course credit hours, including two broad, introductory three-credit courses (ENVS 5000 Policy, Science, and the Environment and ENVS 5003 Theory and Methods in Environmental Studies). These courses, which are typically taken during a student's first year, are designed to expose students to the multiple fields of study that are strengths within the ENVS program and also to expose them to interdisciplinary approaches and methods to environmental problem solving.

All students must also take two semesters of ENVS Colloquium (2 credits), a topical seminar series. Additional course work is designed to meet a student's individual needs and interests and is initially formulated during a student's Guidance Committee meeting at the beginning of their first semester.

The PhD also requires 30 hours of dissertation credits and successfully preparing and defending the doctoral dissertation.

There are five major meetings and examinations that a doctoral student must complete:

Guidance Committee Meeting

During the first six weeks of each new student's first semester (typically in the fall), a guidance committee of three faculty members will examine the student's past course record (from undergraduate and past graduate work) and devise a program of course work for that student. Responsibility for convening these meetings falls on the advisor. However, the graduate director and graduate coordinator will aid in the scheduling of these meetings and, if needed, intervene to ensure they occur on schedule. These committees and their meeting should be shaped by these considerations:

- The committee should be composed of the primary advisor and at least two other faculty members. To ensure breadth of viewpoints, one member of the committee will be assigned by the Graduate Committee and will be someone outside the student's specific areas of research interest. The Graduate Committee must approve the composition of each committee to ensure that appropriate knowledge of ENVS procedures and history are represented.
- Before the committee meeting, the student should provide a brief overview of their intellectual interests and provide an assessment of their own weaknesses and strengths in training.
- The committee, working with the student, should devise a list of both suggested and mandated courses. Course work can be specified as either a single course or a type of course (e.g., "a course covering the use of multivariate statistics," as opposed to a specific course number). In addition, the committee can suggest that the student TA certain classes as another way of exposing them to particular fields; any such suggestions should consider the feasibility of the student actually being able to TA such a course. For some areas of the program, groups of faculty have coordinated on a common set of classes for their students to take.
- The assigned course work should provide the student with depth of understanding in their research field(s) and ensure that the student has some breadth of training or experience in one or more other aspects of environmental studies.
- While the number of classes suggested or mandated will vary depending on each student's past training and research plans, a typical list of required classes for a PhD student should generally not exceed six such classes.
- This first-semester guidance committee's work is finished after its one meeting, with no requirement that the members be on subsequent committees for a student.

Preliminary Examination

The first exam that a doctoral student must take is the preliminary exam, which consists of a written exam only (from undergraduate and past graduate work) and will be someone outside the student's specific areas of research interest. The Graduate Committee must approve the composition of each committee to ensure that appropriate knowledge of ENVS procedures and history are represented.

- The committee must have at least three members and may have up to five. The Graduate Committee must approve the composition of each committee to ensure that appropriate knowledge of ENVS procedures and history are represented.
Prospectus Defense

The prospectus defense (also known officially as the comprehensive exam) is designed to assess a PhD student's knowledge of their research area and specifically to evaluate the student's dissertation research proposal. At the prospectus defense meeting, the committee will also review the student's completion of course work assigned in previous committee meetings. A student may advance to candidacy without completing all the formally assigned coursework, with the approval of the committee.

The exam should be taken in the student's fifth semester, and no later than the sixth semester, of graduate study in ENVS. Any exceptions to this rule require the permission of the ENVS Graduate Committee. During the semester in which the student plans to defend the dissertation prospectus, an admission to candidacy application must be completed and approved by the faculty advisor and the graduate director, and submitted to the Graduate School at least three weeks before the prospectus defense. The Graduate Coordinator will assist the student with the completion of the admission to candidacy application.

By six weeks prior to the arranged exam date, committee members will provide the student with reading materials that cover both general and specific material upon which the exam will be based. It is the student's responsibility to meet with committee members and obtain these reading lists prior to the exam date, as well as to set a time for their exam. ENVS typically designates one weekend per semester as the standard dates for prelim exams, but depending on student and faculty schedules, the exam may be taken at another time if approved by the graduate director.

The chair of the exam committee (usually the student's advisor) will work with the committee to develop and finalize the exam questions. Typically, each committee member is expected to develop one question for the exam; however, in some cases it may be more appropriate for committee members to collaborate on one or more questions. The graduate coordinator will then deliver the questions to the student and to the graduate committee on the first day of the exam. Each committee member may mandate whether their questions are to be answered open book or closed book.

The student will have four days to answer the questions.

The student will deliver their answers to the graduate coordinator and the committee members at the end of the exam. The committee will then have one month to read and score the answers.

The committee should meet (without the student) to discuss the student's answers and decide how each response will be scored. Each answer should be scored as:

- Exceeds expectations
- Meets expectations
- Does not meet expectations
- To pass the exam, the student must receive "meets expectations" on all answers. A student who receives "exceeds expectations" on two more answers is considered to have passed with distinction. A student who does not meet expectations on one or more answer is permitted to take that section a second time.

For more information, visit the program's Preliminary Examination (http://www.colorado.edu/envs/graduate-students/ms-phd-programs/phd/preliminary-examination) webpage.

The prospectus defense committee is made up of five people, including the student's primary advisor and four other members who are approved by the ENVS Graduate Committee and who are in a field related to the student's area of research. Three of the members must be CU Boulder graduate faculty, and one must be from outside the ENVS program. The primary advisor and outside member of the committee must have regular or tenured graduate faculty appointments. The other committee members must have either regular or special graduate faculty appointments. For committee members not on the CU Boulder faculty roster, students must submit a CV to the Graduate School and request a special appointment to the graduate faculty. Please consult the graduate coordinator (Envsgrad@colorado.edu) for details.

At least two weeks before the scheduled meeting, the student must submit a research proposal to the dissertation committee on the dissertation topic. A copy of this proposal must be submitted to every member of the committee. Students are strongly encouraged to consult with committee members and particularly their advisors as they prepare this document. The research proposal should include the following categories:

- Abstract of proposed work.
- General introduction that puts the proposed project into perspective and reviews the relevant literature in the field.
- Rationale for and importance of the research.
- Relevant preliminary research already completed or in progress.
- Research design, including proposed methods and research plan.
- References (not included in page count).

This document must be limited to 15 single-spaced pages, including figures and tables, but excluding references.

The student should prepare a 20-minute formal presentation on their research progress and research plan for presentation at the exam meeting. The presentation should be of a format acceptable at a national professional meeting, highlight the questions addressed by the student's research and include sufficient details on methods to be analyzed by the committee.

At the exam meeting, the student will deliver their presentation, to be followed by a discussion of the research presented. Committee members will also probe the student's knowledge of the contemporary and historical literature related to the student's proposed research. Students are encouraged to seek advice from all prospectus defense committee members about their expectations concerning subject matter and level of knowledge for this exam. No restrictions are placed upon committee members with regard to subject matter relevant to the dissertation topic. The combination of the presentation and oral examination take approximately two hours.

Following the exam, the committee should complete the doctoral examination report, specify one of the three possible outcomes, and return it to the graduate coordinator.

- **Pass**: The student receives affirmative votes from a majority of the members of the committee. There are no additional requirements.
- **Conditional Pass**: The student is required to take additional requirements as required by the examining committee, and will not pass the exam until they complete these requirements. A conditional pass will be assigned if a student fails to demonstrate a sufficient understanding of the literature in their core research area and/or fails
to articulate the motivation and design of their PhD research in either the proposal or the oral examination.

- **Fail**: The student is either asked to leave the program or to retake the prospectus defense. A student may only re-defend once.

**Dissertation**

A doctoral student writes a dissertation based upon original investigation, demonstrating mature scholarship and critical judgment, as well as familiarity with tools and methods of research. The subject must be approved by the student’s major department.

- Generally, a PhD is comprised of main chapters that could together comprise a viable book manuscript or result in three independent papers in leading peer-reviewed journals in the student’s field. Short introductory and concluding chapters that frame the work and speak to its intellectual unity and contributions are also expected of most PhD dissertations.
- Every dissertation presented in partial fulfillment of the requirements for an advanced degree must represent the equivalent of at least 30 credit hours of work.
- The student is responsible for notifying the Graduate School of the exact title of the dissertation on or before the posted deadlines during the semester in which the doctoral degree is to be conferred.
- The dissertation must comply in mechanical features with the specifications for theses and dissertations available in the Graduate School (http://www.colorado.edu/GraduateSchool/academics/doctoral_graduation_packet.html).

In addition, the following conditions must be met:

- The dissertation is filed electronically to ProQuest (http://www.etdadmin.com/cgi-bin/school?siteId=70) according to the Graduate School (http://www.colorado.edu/graduateschool/current-students) instructions by the posted deadlines in the doctoral packet (http://www.colorado.edu/graduateschool/academics/graduation-requirements) for the semester in which the degree is to be conferred.
- A signature page with original signatures from the chair of the student’s committee and at least one other committee member must be submitted to the Graduate School by the same submission deadline.
- The survey of earned doctorates form is submitted to the National Science Foundation (https://sed-ncses.org) website.

The final grade for dissertation credits taken by a student is withheld until the dissertation is completed. In progress (IP) grades are assigned during each semester until the defense is successfully completed and the final copy of the dissertation is accepted by the examination committee, at which time the final grade for all dissertation hours is submitted to the Graduate School.

**Dissertation Defense**

The final step in a PhD is defense of the doctoral dissertation. Several steps must be followed for a valid dissertation defense meeting to be held:

- The student must be registered as a full-time, regular, degree-seeking student at CU Boulder for a minimum of 5 dissertation hours during the semester in which they pass the final examination.
- Students must notify the Graduate School of their final oral examination at least two weeks before their scheduled examination date. The examination must be scheduled no later than the posted deadline for the semester in which the degree is to be conferred. This information should be provided on the doctoral examination report and leaflet.
- This defense is wholly or partly oral, and consists of both a public presentation, open to anyone, and a closed-door meeting with the committee. This committee is appointed by the chair of the major department and approved by the dean of the Graduate School, and should consist of at least five persons, one of whom must be from outside the student’s major department. Three of the members must be CU Boulder graduate faculty. The chair and outside member of the committee must have regular or tenured graduate faculty appointments. The other committee members must have either regular or special graduate faculty appointments.

Following the defense meeting, the committee votes on the outcome. More than one dissenting vote disqualifies the candidate. The committee chair and a majority of the committee must be present on the Boulder campus for the examination. A student who fails the examination may attempt it once more after a period of time determined by the examining committee.