

# **Graduate Student and Faculty Advisor Handbook**

**Environmental Science Program  
University of Idaho  
2011**

**Biological Science**



**Social Science**

**Physical Science**

**Emphasizing the Importance of Interdisciplinary  
Research in Addressing Environmental Issues**

**Graduate Student and Faculty Advisor Handbook**  
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## **I. Program Overview**

### **Introduction**

This handbook has been prepared by the Environmental Science Program to supplement the information included by the College of Graduate Studies. It includes general information and regulations concerning graduate studies at the University of Idaho, as well as information pertaining to students in this program.<sup>1</sup>

The University of Idaho Environmental Science Program emphasizes an integrated approach for students committed to studying and solving environmental problems. Over 100 faculty from throughout the university work across traditional disciplines to provide students with a comprehensive education in environmental mitigation and problem-solving.

### **The Master of Science Degree**

By taking 30 graduate credits, including at least six thesis credits and a minimum of 24 credits of course work, students can earn a Master of Science in Environmental Science. The non-thesis degree program requires 30 graduate level credits, including at least three credits in non-thesis research and 27 credits of course work. Coursework must be distributed across the three option areas of physical, biological and social science. The degree entails completion of a substantial project in which students demonstrate their ability to do rigorous independent work.

### **The Ph.D. Degree**

The Ph.D. in environmental science provides students with an understanding of the complexity of environmental problems, and an integrated and coherent approach to solving them. The Ph.D. requires 78 credits beyond Bachelors degree coursework; of these, at least 52 credits must be numbered 500 and above, and at least 33 of the 78 credits must be in courses other than 600 (Doctoral Research and Dissertation). All candidates prepare a formal dissertation reflecting original thought and independent investigation, and pass a preliminary examination on the proposed work.

### **Registration**

A graduate student is considered full-time when registered for at least 9 credits of courses and/or thesis work. All graduate students may take up to 16 credits per semester.

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<sup>1</sup> We have tried to present accurate information in this handbook that agrees with University policies. However, because policies and interpretations change over time, it is the student's responsibility to ensure requirements of his/her degree are met. Please bring any errors to the attention of the Program Director so that appropriate and accurate information can be included.

## II. M.S. w/Thesis Curriculum Requirements

Name \_\_\_\_\_

Option Area (Physical, Biological, Social) \_\_\_\_\_

Faculty Advisor \_\_\_\_\_

### REQUIREMENTS:

Total Credits = 30 (21 credits at the 500-level, including seminars and research, maximum 9 credits at the 400 level); thesis option, 24 credits of coursework, non-thesis option, 27 credits of coursework.

6 total credits at the 400 or 500 level from both areas outside your option area

1.

2.

9-12 credits in option area

1.

2.

3.

4.

One 500-Level research methods, directed study or statistics course

1.

Environmental Science 501 Special Topics Seminar (1 credit)

1.

Option Area Graduate Seminar (2 credits)

1.

Research and Thesis (EnvS 500, 6 credits)

1.

2.

Undergraduate Deficiencies: (must complete before MS can be awarded)

### Committee Structure:

MS Thesis: Four faculty members: one faculty member from each of the three option areas (biological science, social science and physical science) and one faculty member from any area. The Major Professor counts as one of these areas. See the ENVS webpage of lists for faculty in each area. Two colleges must be represented.

## M.S. Non-Thesis Curriculum Requirements

Name \_\_\_\_\_

Option Area (Physical, Biological, Social) \_\_\_\_\_

Faculty Advisor \_\_\_\_\_

### REQUIREMENTS:

Total Credits = 30 (26 credits of coursework with no more than 9 credits at the 400 level, and 4 credits of non-thesis research)

#### Option Area Requirements (21 credits)

For the EnvS M.S. at a distance, the option area is **water science**. You are required to take *6 credits*, or two classes, in social science.

- 1.
- 2.

The remaining *15 credits*, or five classes, need to come from biological science *and* physical science to give you depth and expertise in your field. See the back of this page for a listing of biological, physical and social science courses. (If you would like to take additional social science courses as part of these 15 credits, please contact the Environmental Science Program for approval at (208) 885-6113.)

- 1.
- 2.
- 3.
- 4.
- 5.

#### One 500-Level research methods, directed study or statistics course (3 credits)

1. EnvS 541 (offered every spring)

#### Environmental Science 501 Special Topics Seminar (2 credits)

1. EnvS 501\*

#### Non-thesis Research (EnvS 599, 4 credits)

1. EnvS 599\*\*

#### Undergrad Deficiencies: (must completed before M.S. can be awarded)

- 1.

#### Committee Structure

Two faculty members (Stephen Mulkey, EnvS Director, usually serves as the second faculty member)

## Ph.D. Student Curriculum Requirements

Name \_\_\_\_\_

Option Area (Physical, Biological, Social) \_\_\_\_\_

Faculty Advisor \_\_\_\_\_

**REQUIREMENTS: Total Credits = 78 (minimum 33 credits of coursework at the 400 or 500-level, including seminars, 9 credits maximum at the 400 level). For transfer credit: 39/78 credits must be in UI courses when enrolled in COGS. The numbers listed below are minimums in each area.**

9 total credits at 400 or 500 level from both areas outside your option area

- 1.
- 2.
- 3.

EnvS 596 Advanced Environmental Science (3 credits)

- 1.

500 level course in research methods, statistics or appropriate directed study (3 credits)

- 1.

16 credits in option area

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Environmental Science 501 Special Topics Seminar (1 credit)

- 1.
- 2.

Option Area Graduate Seminar (2 credits)

- 1.

Dissertation (EnvS 600, up to 45 credits)

Undergrad Deficiencies

Committee Structure

Four faculty members: one faculty member from each of the three option areas (biological science, social science and physical science), and one faculty member in any area. The Major Professor counts as one of these areas. See the ENV5 webpage for lists of faculty in each area. Two colleges must be represented.

### **III. Student/Major Professor/Committee Relationships, Expectations, & Suggested Protocols\***

**The student**, not the major professor, **is responsible for meeting all deadlines and academic requirements** and for initiating a process of regular communication with major professor and committee.

The student is responsible for his/her own program. This includes:

- Initiating regular communication and frequent meetings with Major Professor. (Non-thesis students will work with their academic advisor to select a major professor after completing 24 credits or coursework.)
- Working with Major Professor to create 1-2 page proposal during the first semester delineating the interdisciplinary integration of the proposed research which is then given to the EnvS Director for approval.
- Establishing a four-person committee within the first year that includes four faculty members: one faculty member from each of the three option areas (biological, social, and physical science) and one faculty member from any area. The Major Professor counts as a committee member. Two colleges must be represented.
- A meeting of the committee as early as possible to ensure that the research includes thinking from the physical, biological, and social science areas.
- Beginning work with Major Professor on research topic immediately. To complete all requirements in two years requires focus and diligence.
- Consistent meetings with your committee to keep them up-to-date on your activities. At the least, communicate with them regularly.
- Proceeding in a timely manner. Set a timetable and refer to it regularly.
- Professional development activities such as attending conferences, presenting conference papers, presenting at departmental graduate student seminars, and writing papers for publication are highly recommended, and the ENVS program will provide some limited funding for these events.
- Informing your committee of professional development activities that you are participating in such as departmental seminars, poster competitions, conference presentations, etc.
- Writing sections of your thesis/dissertation as soon as possible. Delaying writing is a common problem for graduate students. The longer you wait, the harder it gets.

- Preparing drafts (proposal, thesis, etc.) in consultation with Major Professor prior to sending it to committee members. Drafts should be grammatically correct and free of typographical and spelling errors.

**\* Some adaptations from Graduate Orientation, “Surviving (and Enjoying!) Graduate School” by Margrit von Braun, former Dean of the College of Graduate Studies.**

## **Professional Conduct and Ethics<sup>21</sup>**

As graduate students and professional scholars-in-training, you are expected to exercise high standards of ethical and professional behavior toward your peers and your professors. Science as a whole can only make progress if individual scientists are truthful and trustworthy. As academic professionals and members of the larger community of scientists, graduate students should practice intellectual honesty at all times. You should exercise scholarly discipline and good critical skills, while engaging in civil, collegial discussion of scientific and professional matters. Ideally, scientific professionals should strive to be objective and fair in their criticism and discussion of colleagues' work. Graduate students must never engage in, permit or otherwise support professional misconduct, including plagiarism, falsification of information, or deception of any kind. Each of us is obligated to report professional misconduct to a supervisor or Program Director as appropriate.

### **Academic Honesty and Research Ethics**

As stated above, graduate students are expected to uphold high standards of intellectual and academic honesty at all times, and to enforce university and departmental standards for academic honesty. The University Faculty and Staff Handbook states that “cheating on classroom or outside assignments, examinations or tests is a violation of [the academic honesty] code. Plagiarism, falsification of academic records, and the acquisition or use of test materials without faculty authorization are considered forms of academic dishonesty...” Should you encounter academic dishonesty, you should immediately bring it to the attention of your teaching supervisor. Other instances should be discussed with your major professor or the Program Director.

There is an expectation that graduate students spend an appropriate amount of time researching and producing new papers for class research projects. If previous papers are to be expanded, you must have permission from the course instructor. A paper written for one course and turned in for a subsequent course will be considered a breach of academic honesty.

### **Harassment**

Graduate students are expected to treat other students, peers, professors, and other colleagues in the university workplace respectfully at all times. By the same token, you are also entitled to respectful behavior on the part of your coworkers. “Harassment” in the workplace is often defined in sexual terms. However, harassment in a broader sense can also take the form of teasing, insults and other hostile or harsh speech, crude gestures, or otherwise acting toward another person in an extremely objectionable or humiliating manner, even when that behavior lacks a sexual context. Legally prohibited harassment includes not only sexual harassment but also harassment based on race, color, national origin, religion, age, disability, sexual orientation or status as a Vietnam-era veteran.

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<sup>2</sup> This section is adapted from the UI Rangeland and Ecology Department Graduate Student Handbook (<http://www.cnr.uidaho.edu/range/StudentResources.htm>).

The University of Idaho Faculty and Staff Handbook Policy 3220 defines sexual harassment as “unwelcome sexual advances, requests for sexual behaviors, or other verbal or physical conduct of a sexual nature.” Such conduct is deemed especially deplorable when it occurs in a relationship where there is a significant power differential, such as harassment of a student by an instructor, “. . .creating an intimidating, hostile, or offensive learning environment,” or interfering with a student’s education. Under no circumstances should a graduate student engage in behavior that might be construed as harassment, sexual or otherwise. If you feel you have been harassed or are aware of a possible violation of the University’s harassment policy, you are strongly encouraged to contact the University’s Office of Human Rights, Access and Inclusion, the Women’s Center, your major professor, or the Program Director.

### **Policy on Graduate Student Complaints**

If a graduate student has a serious complaint regarding how he/she has been treated in class or research projects, this should be brought to the Program Director or the student graduate committee advisor. Complaints may include, but are not limited to, conflicts that involve a colleague, teaching supervisor, employer, or major professor. The student should attempt to resolve the problem by informal discussion with those involved in the grievance before a formal grievance is brought to the Program Director. The Program Director will work with the student to bring the situation to a reasonable conclusion. If necessary the student may visit the College of Graduate Studies for additional assistance.

## **IV. Interdisciplinary Research**

### **Definitions**

#### Interdisciplinarity

“Interdisciplinary research (IDR) is a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or area of research practice.”

From *Facilitating Interdisciplinary Research*, National Academy of Sciences (NAS), 2004.

#### Integration

Criteria/examples of what constitutes “integration:”

- Expose students to the literature surrounding the research question from all three areas (physical, biological, social science). Expect at least two of these areas to be used in the research.
- Collect data (or information from the literature) in at least two areas that bear on the research and use that information in the research.

### **Strategies for Interdisciplinary Research**

#### Suggested Ways to Ensure Interdisciplinary Work

- From the beginning of your project, think about how the research includes aspects and implications for physical, biological and social sciences.
- Your research question and objectives should be created so that achieving the objectives requires work in at least two, preferably three, of the three areas.
- Consider and discuss with your Major Professor and committee how your research is different as an EnvS student than in a single discipline.
- Think about devoting a chapter in the thesis/dissertation to explaining the interdisciplinary nature of the research or discussing the broader implications of the work.
- Engage in a process of planning and thought regarding how you would go about collecting and using data from at least one of the other areas. For example, why and how would social science and/or physical science data enrich a biological research project? What would you collect, given sufficient time and money, and how would you use it?
- Imagine that an agency is so impressed by your research that it decides to fund you to include the broader aspects of the problem including the other two areas. What would you do, how would you do it, and how would you use it?
- At the defense, your Major Professor and committee should ask at least one of the following questions (or another integrating question):
  - How has this research used ideas or approaches from at least two of the areas of physical, biological, and social science?
  - How have you used interdisciplinary thinking in this research?

- Could this work have been done in the same way in a single discipline?
- What are the broader implications of your work as they apply outside of your option area?
- If you went on to continue work on this project, how would you continue to gather data and integrate information from the three areas into your research?
- As you apply the results of your work in the field, how would you integrate information from the three option areas?
- If you had to explain the implications of your research to a person with a completely different background (a manager, politician, or member of the public), what would you say?
- What is important about your research in solving environmental problems?

### **Further Readings in Interdisciplinarity**

Committee on Facilitating Interdisciplinary Research, National Academy of Sciences, National Academy of Engineering, Institute of Medicine. *Facilitating Interdisciplinary Research*. National Academy of Sciences, 2004.

Gilbert, L.E. "Disciplinary breadth and interdisciplinary knowledge production," *Knowledge, Technology, and Policy* 11: 4-15, 1998.

Janssen, W. and P. Goldsworthy. "Multidisciplinary research for natural resource management: conceptual and practical implications," *Agricultural Systems* 51.3: 259-279, 1996.

Klein, J.T. *Interdisciplinarity: History, Theory, and Practice*. Detroit, MI: Wayne State University, 1990.

Klein, J.T. *Crossing Boundaries: Knowledge, Disciplinarity, and Interdisciplinarity*. Charlottesville, VA: UP of Virginia, 1996.

Lattuca, L. R. *Creating Interdisciplinarity: Interdisciplinarity Research and Teaching Among College and University Faculty*. Nashville, TN: Vanderbilt UP, 2001.

Newell, William H. "A Theory of Interdisciplinary Studies," *Issues in Integrative Studies*, 19: 1-25, 2001.

**V. Steps to the Degree - M.S. Program\***  
 Expected date of completion \_\_\_\_\_

<u>Activity</u> <u>Completion</u>	<u>Suggested</u>
<input type="checkbox"/> Appoint Major Professor	Prior to Admission
<input type="checkbox"/> Interdisciplinary proposal to EnvS Director	End of first semester
<input type="checkbox"/> Appoint Committee	Mid 2 <sup>nd</sup> semester
<input type="checkbox"/> File Committee Form Appointment of Major Professor and/or Committee <a href="http://www.uidaho.edu/cogs/forms">http://www.uidaho.edu/cogs/forms</a>	Mid 2 <sup>nd</sup> semester
<input type="checkbox"/> Prepare Study Plan	End of 2 <sup>nd</sup> semester
<input type="checkbox"/> Committee Review of Study Plan	End of 2 <sup>nd</sup> semester
<input type="checkbox"/> Meet with academic advisor in ENVS to review study plan	End of 2 <sup>nd</sup> semester
<input type="checkbox"/> Submit Study Plan online in Vandal Web	End of 2 <sup>nd</sup> semester
<input type="checkbox"/> Research	
<input type="checkbox"/> Analyze data/summarize results	End of 3 <sup>rd</sup> semester
<input type="checkbox"/> Work with Major Professor & Committee on draft material	3 <sup>rd</sup> and 4 <sup>th</sup> semester
<input type="checkbox"/> File application for degree in Vandal Web	End of 3 <sup>rd</sup> semester
<input type="checkbox"/> Thesis review by committee	4 <sup>th</sup> semester
<input type="checkbox"/> Prepare final draft	4 <sup>th</sup> semester
<input type="checkbox"/> Grad school check of thesis format	End of 4 <sup>th</sup> semester
<input type="checkbox"/> File authorization for final defense Request to Proceed with Final Defense <a href="http://www.uidaho.edu/cogs/forms">http://www.uidaho.edu/cogs/forms</a>	End of 4 <sup>th</sup> semester
<input type="checkbox"/> Non-thesis students file authorization for project Non-thesis Requirement Report Form <a href="http://www.uidaho.edu/cogs/forms">http://www.uidaho.edu/cogs/forms</a>	End of 4 <sup>th</sup> semester
<input type="checkbox"/> Pick up defense forms from Grad school	End of 4 <sup>th</sup> semester

Authorization to Submit Thesis or Dissertation

<http://www.uidaho.edu/cogs/forms>

Final defense End of 4<sup>th</sup> semester

Prepare final copy of thesis, complete forms,  
& turn into the Grad school End of 4<sup>th</sup> semester

<http://www.uidaho.edu/cogs/currentstudents/guides/howto>

\*Under ideal conditions, this is a full-time 2 year program. Individual deadlines should be developed with Major Professor and Committee.

**Steps to the Degree - Ph.D. Program\***  
 Expected date of completion \_\_\_\_\_

<u>Activity</u> <u>Completion</u>	<u>Suggested</u>
<input type="checkbox"/> Appoint Major Professor	At admission
<input type="checkbox"/> Interdisciplinary proposal to EnvS Director	End of first semester
<input type="checkbox"/> Appoint Committee	Mid 2 <sup>nd</sup> semester
<input type="checkbox"/> File Committee Form Appointment of Major Professor and/or Committee <a href="http://www.uidaho.edu/cogs/forms">http://www.uidaho.edu/cogs/forms</a>	End of 2 <sup>nd</sup> semester
<input type="checkbox"/> Prepare Study Plan	End of 3 <sup>rd</sup> semester
<input type="checkbox"/> Committee Review of Study Plan	End of 3 <sup>rd</sup> semester
<input type="checkbox"/> Meet with academic advisor in ENVS to review study plan	End of 3 <sup>rd</sup> semester
<input type="checkbox"/> Submit Study Plan online in Vandal Web	End of 3 <sup>rd</sup> semester
<input type="checkbox"/> Develop research proposal	End of 3 <sup>rd</sup> semester
<input type="checkbox"/> Committee review of proposal	End of 3 <sup>rd</sup> semester
<input type="checkbox"/> Preliminary Examination**	End of 4 <sup>th</sup> semester
<input type="checkbox"/> File Candidacy form Report of Pre-lim Exam & Advancement to Candidacy <a href="http://www.uidaho.edu/cogs/forms">http://www.uidaho.edu/cogs/forms</a>	End of 4 <sup>th</sup> semester
<input type="checkbox"/> Proposal Defense	End of 4 <sup>th</sup> semester
<input type="checkbox"/> Research	
<input type="checkbox"/> Analyze data/summarize results	End of 4 <sup>th</sup> semester
<input type="checkbox"/> Work with Major Professor & Committee on draft material	End of 4 <sup>th</sup> semester
<input type="checkbox"/> File application for degree in Vandal Web	End of 5 <sup>th</sup> semester
<input type="checkbox"/> Dissertation review by committee	6 <sup>th</sup> semester

- Prepare final draft 6<sup>th</sup> semester
  - Grad school check of dissertation format 6<sup>th</sup> semester
  - File authorization for final defense 6<sup>th</sup> semester  
Request to Proceed with Final Defense  
<http://www.uidaho.edu/cogs/forms>
  - Pick up defense forms from Grad school End of 6<sup>th</sup> semester  
Authorization to Submit Thesis or Dissertation  
<http://www.uidaho.edu/cogs/forms>
  - Final defense End of 6<sup>th</sup> semester
  - Prepare final copy of dissertation, complete forms, End of 6<sup>th</sup> semester  
& turn into the Grad school  
<http://www.uidaho.edu/cogs/currentstudents/guides/howto>
- Survey of Earned Doctorates, UMI  
<http://www.uidaho.edu/cogs/forms>

\* Under ideal conditions, this is a full-time 3 year program. Individual deadlines should be developed with Major Professor and Committee

\*\* There is a 5 year limit for the completion of the Ph.D. program following the preliminary examination.

## Online Information for Graduate Students

College of Graduate Studies

<http://www.uidaho.edu/cogs>

Admission Requirements

<http://www.uidaho.edu/graduateadmissions/requirements/admissionrequirements>

Handbook for Writing Theses and Dissertations

<http://www.uidaho.edu/cogs/currentstudents/thesis>

Steps to Your Degree

<http://www.uidaho.edu/cogs/currentstudents/guides/howto>