

School of the Environment Washington State University

Graduate Student Handbook

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Graduate Student Handbook

School of the Environment Washington State University

Welcome to the School of the Environment (SOE) at Washington State University (WSU)! The School of the Environment is jointly administered by the WSU College of Arts and Sciences and the College of Agriculture, Human and Natural Resource Sciences. SOE is an academic unit with faculty, students, and staff at multiple campuses and research centers across the WSU system.

This Graduate Handbook describes SOE policies and procedures for all our graduate programs and provides you with essential information as you navigate your graduate degree. It contains information specific to graduate studies within the SOE and general information of interest to all WSU graduate students.

Although we regularly update the handbook, it is not meant to be all-inclusive. More detailed information may be accessed via the Graduate School Policies & Procedures website, the department coordinator, your advisor, and campus-specific resources for details pertaining to each location and degree program. An important part of the SOE graduate mission is to provide world class graduate education in geoscience, wildlife ecology, natural resource sciences, forestry, and environmental sciences.

Graduate students are centrally and crucially important to SOE in research, teaching and maintaining a vibrant academic community. We welcome your participation.

Sincerely,

Dr. Lisa Shipley

Professor & Associate Director
Graduate Programs
Pullman, Puyallup, Tri-Cities, and Vancouver Campuses

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I. About the School of the Environment

Our Mission

The School of the Environment supports the mission of Washington State University as a major land-grant research institution. Our teaching, research, and outreach advances understanding of the Earth's complex and dynamic physical, structural, biogeochemical, ecological, and biological systems, and effects of land use and climate change. We advance scientific and social innovations needed to conserve biological diversity and to promote productive and sustainable ecological and human communities.

Through our academics and research, SOE aims to:

- Generate fundamental knowledge about the Earth, environmental and ecological processes, natural resources, and human-environment interactions.
- o Develop **solutions** to state, national, and global environmental problems.
- Provide cutting-edge training to the next generation of research scientists, environmental and natural resource managers, environmental leaders, policy makers and global citizens.
- Facilitate the integrated research and education necessary to support the Land Grant mission to achieve a sustainable future.
- Promote the long-term conservation and enhancement of biological diversity and natural resources in an ecologically sustainable manner.

II. Academic Requirements, Policies and Procedures

Continuous Enrollment

All graduate students-- full and part-time --must maintain continuous enrollment in the Graduate School from their first semester until their degree is completed, regardless of campus location.

To maintain continuous enrollment, students must register for at least 2 graduate credits per enrolled semester (excluding summer, except under circumstances directed by their advisor). Students who are unable to maintain continuous enrollment (e.g., medical, family, financial,

military service) may apply for a Graduate Leave of Absence. See <u>Chapter 5 of the Graduate School policies and procedures manual.</u>

Minimum GPA

Students must maintain a minimum cumulative 3.0 GPA to be considered in good academic standing. Failure to do so may result in probationary status or termination from the graduate program. Please see the Graduate School Policies and Procedures Manual, pp. 570587 for details.

Total Credits & Satisfactory Academic Process

Students must satisfy a certain number of credits per degree prior to submitting their program of study for it to be approved by their advisors and the Graduate School. Those numbers are listed below. In addition to this, students are required to take 10 WSU credits per semester to be considered a full-time student (U of I Coop credits do not count toward your 10 WSU credits), and 10 credits are required for those on assistantships.

You should use the Graduate School's Program of Study form to keep track of and plan to meet degree-specific credit goals, which are as follows:

- Master's thesis-track degrees: No less than 30 hours of approved graduate credit
 including a minimum of 21 hours of graded coursework and 4 hours of 700 master's
 research. Of these 21 hours of coursework, the student may use up to 6 credits of nongraduate level credit (300 or 400 level) with the approval of their department.
- <u>Master's non-thesis degrees:</u> No less than 30 hours of approved graduate credit including a minimum of 26 hours of graded coursework and a minimum of 4 hours of 702 Master's Research. Of these 26 hours of coursework, the student may use up to 9 credits of non-graduate level credit (300 or 400 level) with the approval of their department
- <u>Doctoral Degrees</u>: Of the minimum 15 hours of core graded coursework required on the Program of Study, none may be from non-graduate level courses. For programs with a larger core, no more than 9 credits of non-graduate credit (300 or 400 level) may be used with the approval of their department.

Students who accumulate more than 72 total credits during an M.S. degree or 180 total credits for the Ph.D. degree, are not considered to be making satisfactory academic progress. If they receive financial aid, they will have to appeal for aid to continue.

Annual Review of Graduate Students

All currently enrolled graduate students and their advisors must complete an annual review of academic progress towards the degree. The review form is distributed to students by the graduate coordinator in early spring semester. These reviews cover the calendar (January through December) rather than the academic year.

The review and associated student CV must be completed by the date stated in the form, per graduate school requirements. A copy of the form to be completed by SOE students appears as Appendix B. The review process is outlined in Chapter 6, Part B, of the Graduate School Policies and Procedures Handbook (Academic Evaluation of Students) https://graduschool.wsuedu/chapter-six-b/. All annual reviews should be forwarded to soe.academics@wsu.edu.

Important forms for Navigating Your Degree

Important forms for navigating your degree are found on the Graduate School's website: https://gradschool.wsu.edu/facultystaff-resources/18-2/.

Most Common Forms Used by SOE Students:

- All But Dissertation Form
- Committee Change Form
- Committee Substitution Form
- Hold Harmless & Copyright Agreement For Thesis/Dissertation
- Graduate Student Petition Form
- Plan & Degree Level Change Form
- Program of Study Request Form
- Program Change Form
- External Committee Member Request
- Residency Questionnaire
- Exam Scheduling Form
- Thesis & Dissertation Word Template

The Program of Study is one of the more important forms, and you should start working on it together with your advisor and graduate committee (See Section III) during the first semester of your graduate program. This form should be submitted to the Graduate school by the end of the second semester of study. Vancouver students should check in with their advisors, as their program of study may be due sooner. Students plan their Programs of Study in concert with their advisor and the thesis/dissertation committee.

The student should contact <u>Denise.Bickford@wsu.edu</u> and copy <u>soe.academics@wsu.edu</u> for help accessing and filling out the proper form for their degree progress. After the student receives a message that the form has been filled out properly, they can begin collecting appropriate signatures. When the form is signed by all necessary parties, return the form to

Denise in the SOE and they will acquire the director's signature, then turn it in to the graduate school through the service request portal.

III. SOE Graduate Programs

The School of the Environment offers several degree programs which cover a broad range of Earth & environmental sciences.

The SOE currently offers two (2) M.S. degree programs:

- 1. M.S. Geology (Pullman)
 - a. Thesis-track only
- 2. M.S. Environmental & Natural Resource Sciences Thesis-track Directed Study Plan
 - a. Non-thesis-track directed study plan
 - b. Thesis-track interdisciplinary plan
 - c. Non-thesis-track interdisciplinary plan

The SOE currently offers two (2) Ph.D. degree programs:

- 1. Ph.D. Environmental & Natural Resources
- 2. Ph.D. Geology

Program of Study

Specific courses to be included on a student's degree plan (Program of Study) are determined as a joint effort between the student, their committee chair (academic advisor), and other members of the advisory committee to meet the needs of the student. All incoming master's students and Ph.D. students who lack prior Graduate School experience must take SOE 501: Graduate Skills Seminar. This course introduces students to graduate study at WSU, the scientific method, and research proposals and presentations. The student's advisory committee and the department chair must approve the Program of Study before it is submitted to the Graduate School for approval.

A maximum of 6 graduate-level credits (with a grade of B or higher) taken at a different accredited institution may be used toward a graduate certificate program requiring 30 or more credits with the approval of the program and the dean of the Graduate School.

Courses taken to remove undergraduate deficiencies cannot be taken for a Pass/Fail grade. Any course included in the advanced degree program in which a grade of "C-"or below is earned must be repeated, but not on a Pass/Fail basis. Courses taken for audit or courses graded Pass/Fail may not be used on the program of study.

Before finalizing research plans and submitting their program of study, students should consult with their advisors to determine whether they need to seek IRB or IACUC approval. IRB approval is needed for research involving humans, and IACUC approval is required for research including animals. See the <u>IRB page</u> and the <u>IACUC page</u> on the website for more information.

Graduate Committee Requirements

The master's committee must have at least three members. Unless specified otherwise in the approved program bylaws, the chair must be a permanent, WSU tenure-track faculty member and a member of the graduate faculty of the student's programs. In all cases, one member of a master's committee must be permanent, WSU tenure-track faculty member and a member of the graduate faculty of the student's program (see exception to this in Chapter 14 of the Graduate School Policies & Procedures manual, Professional Master's Degree Programs). All committee members must hold a degree of comparable level to the degree sought by the candidate. Non-tenure WSU faculty (i.e., research, clinical, adjunct, affiliate) who are active participants within a graduate program may serve on, co-chair, or chair a committee. If they are approved in the program bylaws and hold a degree of comparable level to the degree sought by the candidate. Adjunct faculty who are not WSU or WSU-affiliated USDA employees may not chair a committee, they may on co-chair or serve as a committee member. These committee requirements are set in place by the Graduate School and are non-negotiable.

Master's committees need two graduate faculty from the SOE. They can be SoE faculty, or can be adjunct, adjoint, or affiliate, but one must be tenure-track. The third member must have a WSU faculty appointment of some kind, such as adjunct or from another unit, but does not have to be tenure-track. If desired, a fourth member can be from outside WSU without a WSU faculty appointment.

Ph.D. committees require two tenure-track members from within the SOE, and a third Graduate faculty member with a WSU faculty appointment (including adjunct, adjoint, or affiliate). Fourth and fifth committee members (if desired) may be outside of WSU. All committee members must hold a graduate doctoral degree comparable to the degree sought by the candidate.

Determining Who Is Eligible to Be Graduate Faculty

	SOE Grad Faculty	Graduate Advisory Committee Roles		SOE Progran	SOE Program Roles		
Professional Status		Chair	Co-Chair	Member	Associate Director	Committee Member	Voting Eligible
WSU Tenure-Track in SOE	Y (automatic)	Y	Y	Y	Y	Y	Y
Career-Track in SOE (research or scholarly appointment)	Y (automatic)	Y	Y	Y	Y	Y	Y
Career-Track in SOE (teaching appointment)	*	*	*	Y	3/c	Y	Y
Emeritus in SOE	Y	N^	Y	Y	N	*	N
WSU Tenure-Track Affiliate in SOE	Y	*	Y	Y	N	Y	N
Adjoint/Adjunct to WSU	Y	*	Y	Y	N	N	N
WSU Tenure-Track not SOE	N	N	N	Y	N	N	N
Not WSU	N	N	N	Y	N	N	N

Determining Who Can Be on A Graduate Committee

Committee	WSU	SOE Grad Faculty	Tenure-Track	Has minimum degree
Member		·		sought (MS or PhD)
1	Y	Y	Y	Y
2	Y	Y	Y (PhD only)	Y
3	Y			Y
Optional 4+		At least 50% must be SOE		Y (and is approved by
		grad faculty		SOE AD Grad Studies)

External & Non-SOE Committee Members

Students may include external faculty members on their committees provided they meet graduate school and SOE policies.

External faculty members may serve as an optional fourth committee member provided 50% of their faculty members are School of the Environment graduate faculty and are approved by the Associate Director of graduate studies.

Third committee members must be WSU faculty (which includes approved adjunct, adjoint, or affiliate faculty) with the same degree level as the degree sought by the graduate student.

Potential external committee members may be offered complimentary adjunct/adjoint status twice per year to be recognized as WSU faculty. The director of the SOE will approve or deny adjunct/adjoint status requests. The SE Graduate Faculty will vote to approve Graduate Faculty status for these members if nominated.

Non-SOE committee members who are WSU faculty but do not hold graduate faculty membership in their respective departments may be voted on to join the SOE graduate faculty. This will allow them to serve on committees as a second member of a graduate student advisory committee.

Master of Science (M.S.) Degrees (Offered)

Descriptions of both degrees are offered in the next section. Students are expected to complete M.S. degree requirements within two years (full-time enrollment, with assistantship), with options for extension as outlined in the Academic Regulations, Policies and Procedures section of the handbook.

Generalized timeline for SOE M. S. degrees:

First year Fall	Take coursework and assemble thesis
	committee
First year – Spring	Committee meeting, file program of study,
	continue coursework and begin research
Summer	Continue research
Second year Fall	Complete coursework and complete data
	analysis
Second year – Spring	Write and defend thesis and graduate

Thesis & Final Examination

The final examination will be mainly a defense of the thesis. All students are required to present a seminar to the faculty and public on their thesis research.

Students submit their dissertation following the Graduate School directions listed on <u>dissertations.wsu.edu</u> at least 10 days prior to the proposed exam date. All thesis submissions and signature page completions are now done 100% digitally.

After a successful final exam, the student has five working days to do the following:

- o Email the Hold Harmless form to qradschool@wsu.edu
- Upload a PDF containing the thesis title page, signature pages, and abstract to myWSU.
 Instructions can be found on the graduate school's forms page under "Cotton Page e-Approval Guide": https://gradschool.wsu.edu/facultystaff-resources/18-2/

Graduate students should be aware of the Departmental rules and requirements regarding distribution of thesis drafts. Because a student only has five working days after defending their dissertation to turn in the final version to the Graduate School, substantially all changes must be addressed prior to defending their thesis in the final exam.

Consequently, your committee members need to have read your thesis prior to scheduling a defense date. This means committee members should receive copies of your thesis at least 14 days before scheduling the final exam, preferably a month before. Depending on your advisor and your writing ability, you should generally allow for three to four weeks prior to this for addressing the rough draft comments.

M.S. Geology

The primary goal of the Geology M.S. program at WSU is to prepare students for professional employment in a broad range of geoscience careers (environmental consulting, minerals/petroleum industry, local/state/federal resource-based or management agencies, teaching), or for serving as a foundation for continuing to graduate studies at the Ph.D. level. WSU offers specialization in multiple subdisciplines, including structure/tectonics, petrology, geochemistry, geophysics/geodynamics, and sedimentology/stratigraphy.

The goal of the M.S. program is to produce broadly trained, professional geoscientists with the ability to conduct original scientific research. In addition to course work, the primary requirement for the M.S. degree is preparation of a thesis that should represent a publishable contribution to the geoscience community. Each program is designed in consultation with a faculty advisor to meet the needs of the student.

Specialization is offered in:

- Sedimentology -Stratigraphy
- Structural Geology Tectonics
- Minerology Petrology-Geochemistry
- Hydrogeology-biogeochemistry
- o Geophysics-Geodynamics

Degree Program	Academic Requirements
M.S. Geology	At least 30 hours minimum of total credits,
Thesis Option:	consisting of:
https://environment.wsu.edu/graduate-	
studies/masters/ms-geology/	 At least 21 hours graded coursework, including At least 15 hours minimum of graded course work at 500 level Up to 6 hours maximum non-graduate (300/400 level) graded coursework is allowed SOE 501 (Graduate Skills Seminar, 1 hour) must be taken during the first year of the program (not graded) At least 2 hours (semesters) SOE 598 (Seminar, not graded) 4 hours minimum of SOE 700 (MS research, thesis or examination), 2 hour of which must be taken in the semester of the final exam (not graded). Thesis
	Final oral exam-Thesis defense

M.S. Environmental & Natural Resource Sciences

The M.S. degree program in Environmental & Natural Resource Sciences focuses on fundamental questions in Environmental Science and Natural Resource Sciences ranging from how we may best conserve the diversity of global, national, and local species, how micro and macro ecologies function with one another, how water, soil, and other natural resource systems impact environments and human society, and how we may best sustainably manage our abundant and diverse natural resources.

Some areas of specialization:

- Ecology and conservation of carnivores, bears, ungulates and other wild herbivores and their habitats
- Ecology of aquatic and terrestrial ecosystems
- Ecohydrology and biogeochemistry
- Quantitative modeling and spatial ecology, including remote sensing

SOE offers thesis and non-thesis tracks, with a directed studies plan and interdisciplinary studies plan for both.

For students in the M.S. in Environmental & Natural Resource Sciences thesis option, the goal is a publishable contribution to environmental and natural resource science. Students in the non-thesis option produce a project rather than a thesis and are required to complete a greater number of graded course credits. Students should discuss with their advisors which option and track are right for them.

Below is a summary of academic requirements for students submitting Programs of Study

Degree Program	Academic Requirements
M.S. Environmental & Natural Resource Sciences – Thesis-	At least 30 hours total
track, Directed Studies	credits, consisting of:
Pullman: https://environment.wsu.edu/graduate-	At least 21 hours of graded
studies/masters/ms-environmental-and-natural-resource-	coursework including:
sciences/	
	 At least 15 hours of
TriCities: https://tricities.wsu.edu/cas/graduate/environmental-	graded coursework
<u>science</u>	at the 500-level
	 Not more than 6
Vancouver: Master of Science in Environmental Science -	hours of non-
Science Graduate Programs - WSU Vancouver	graduate (300-400

level) graded
coursework

- 1 hour SOE 501 –
 graduate skills
 seminar (not
 graded)
- 4 hours minimum of SOE 700 (master's research, thesis, and/or evaluation),
 2 of which must be taken in the semester of the final exam (not graded)

Courses taken for audit may not be used on the program of study

Thesis

Final oral exam - thesis defense

Degree Program	Academic Requirements
M.S. Environmental & Natural Resource Sciences Thesis-track, Interdisciplinary Plan	At least 33 hours of total credits, consisting of:
Pullman: https://environment.wsu.edu/graduate-studies/masters/ms-environmental-and-natural-resource-sciences/	At least 30 hours of total credits, consisting of: • At least 21 hours of graded course
resource-sciences/ Tri-Cities: https://tricities.wsu.edu/cas/graduate/environmental-science	work including: At least 15 hours minimum of graded course work at the 500-level, including: 2 hours of SOE 592 or
	597 (Advanced Topics) 3 hours of SOE 544 (Environmental Assessment) or other

policy/society/manage ment course a hours of statistics, math or other quantitative course work13 hours of additional graded course work a At least 8 hours of graded courses must be SOE prefix No more than 6 hours nongraduate (300-400 level) graded course work 1 credit of SOE 501 – Graduate Skills Seminar (not graded) 2 credits of SOE 598 (Seminar, not graded) 6 credits minimum of SOE 700 (Master's research, thesis, and/or evaluation), 2 of which must be taken in the semester of the final exam (not
graded) Courses taken for audit may not be used on the program of study
Thesis
Final oral exam - thesis defense
Committee ballot meeting

Degree Program	Academic Requirements	
M.S. Environmental & Natural Resource Sciences Non-thesis, Directed Studies Plan	At least 33 hours of total credits, consisting of:	
Pullman: https://environment.wsu.edu/graduate-studies/masters/ms-environmental-and-natural-resource-sciences/	 At least <u>26</u> hours of graded course work, including: At least <u>20</u> hours of graded course work at the 500-level 	

Tri-Cities : https://tricities.wsu.edu/cas/graduate/environmental-science

- o Not more than 9 hours maximum of nongraduate (300-400 level) graded course work.
- <u>1 credit of SOE 501 –</u> <u>Graduate skills seminar (not graded)</u>
- At least 4 hours minimum of SOE 702 (Master's special project, directed study or examination), 2 of which must be taken in the semester of the final exam (not graded)

Courses taken for audit may not be used on the program of study

Final project

Committee ballot meeting

Degree Program	Academic Requirements
M.S. Environmental & Natural Resource	At least 33 hours of total credits,
Sciences Non -Thesis, Interdisciplinary Plan	consisting of:
Pullman: https://environment.wsu.edu/graduate-	At least 26 hours of graded
studies/masters/ms-environmental-and-natural-	coursework, including:
<u>resource-sciences/</u>	 At least 20 hours of graded
	course work at the 500-level,
Tri-Cities	including:
https://tricities.wsu.edu/cas/graduate/environmen	o 2 credits of SOE 592 or
<u>tal-science</u>	597 (Advanced Topics)
	o 3 credits of SOE 544
	(Environmental
	Assessment), or other
	policy/society/managem
	ent course
	o 3 credits of statistics or
	math courses
	o 18 credits of additional
	graded course work

- At least 6 credits of graded courses must be SOE pre-fix
- Not more than 9 hours maximum of nongraduate (300-400 level) graded course work
- 1 credit of SOE 501–
 Graduate skills seminar (not graded)
- 2 credits of SOE 598 –
 Seminar (not graded)
- At least 4 credits minimum of SOE 702 (Master's special project, directed study or examination), 2 of which must be taken in the semester of the final exam (not graded).

Courses taken for audit may not be used on the program of study

Final project

Committee balloting meeting

Doctoral Degrees Offered

The following is a timeline offered as a guide to the timely completion of the Ph.D. degrees described above. Note that the total duration of any individuals' doctoral program will vary depending on prior degrees earned, research topic and methodological approaches. the guide below would be typical of a Ph.D. student who entered the program having already earned a M.S. in a related field.

Generalized Timeline for Ph.D. Programs:

1 st Year - Fall	Assemble dissertation committee
1 st year - Spring	Committee meeting, continue coursework,
	begin research, file program of study
Summer	Continue research
2 nd Year- Fall	Continue coursework, continue research,
	committee meeting
2 nd Year– Spring	Finish coursework, prepare for and complete
	preliminary examination
Summer	Continue research
3 rd Year– Fall	Continue research, committee meeting,
	begin data analysis
3 rd Year– Spring	Continue research, continue data analysis
Summer	Continue research, continue data analysis
4 th Year – Fall	Complete data analysis, begin writing
4 th Year - Spring	Complete writing, defend dissertation

Preliminary Examination:

Each student is required to pass a preliminary examination to become a candidate for the Ph.D. degree. This examination will be taken after most of the required coursework has been completed, as determined by the dissertation committee, and upon submission of a dissertation research proposal, usually after the second year in the program. It will consist of a written exam followed by an oral defense, the format of which will be determined by the individual committee. Both will focus on the student's major area of competency, courses taken, and the subject matter of the proposed research.

If the student fails to pass the examination after the allowed number of attempts, SOE will recommend to the graduate school that the student be disenrolled from the program.

Dissertation and Final Examination

The final examination will be mainly a defense of the dissertation. All students are required to present a seminar to the faculty and public on their dissertation research.

Students submit their dissertation following the Graduate School directions listed on dissertations.wsu.edu at least 10 days prior to the proposed exam date. All dissertation submissions and signature page completions are now done 100% digitally.

After a successful final exam, the student has five working days to do the following:

- Email the Hold Harmless form and Survey of Earned Doctorates completion certificate to <u>gradschool@wsu.edu</u>
- Upload a PDF containing the dissertation's title page, signature pages, and abstract to myWSU. Instructions can be found on the graduate school's forms page under "Cotton Page e-Approval Guide": https://gradschool.wsu.edu/facultystaff-resources/18-2/

Graduate students should be aware of the Departmental rules and requirements regarding distribution of dissertation drafts. Because a student only has five working days after defending their dissertation to turn in the final version to the Graduate School, substantially all changes must be addressed prior to defending their thesis in the final exam.

Consequently, your committee members need to have read your dissertation prior to scheduling a defense date. This means committee members should receive copies of your dissertation at least 14 days before scheduling the final exam, preferably a month before. Depending on your advisor and your writing ability, you should generally allow for three to four weeks prior to this for addressing the rough draft comments.

Ph.D. in Geology

The primary goal of the Geology Ph.D. program at WSU is to train students to be independent researchers and/or educators, and to bring students to the forefront of a specialized geoscience subdiscipline. Ph.D. graduates are expected to have demonstrated the ability to conduct independent research and should have the level and breadth of knowledge that one could expect of someone who has attained the highest academic degree in their field. Ph.D.

Graduates of the Ph.D. program normally go on to employment in specialized geoscience careers, including college-level teaching and/or research, resource industries, or state federal resource and management agencies.

Research performance, as demonstrated by preparation of a dissertation on an independently pursued research topic, is the primary requirement for the Ph.D. degree. The dissertation is expected to be a significant advance forward in solving scientific problems specific to the student's chosen subdiscipline, and often consists of multiple publishable chapters. Each program is designed in consultation with a faculty advisor to meet the needs of the student.

WSU offers specialization in multiple subdisciplines, including:

- Structure/tectonics
- Petrology
- Geochemistry
- Geophysics/geodynamics
- o and sedimentology/stratigraphy

Degree Program	Academic Requirements	
Ph.D. in Geology	72 hours minimum of total credits	
Pullman,	consisting of:	
Vancouver	o 15 hours minimum of graded	
Tri-Cities	course work at 500 level if	
https://environment.wsu.edu/graduate-	student has an M.S. Or 17	
studies/phd/phd-qeology/	hours minimum of graded	
	500-level coursework if	
	student has only a B.S.	
	o 9 hours maximum non-	
	graduate 300/400 level graded	
	course	
	o 20 hours minimum of SOE 800	
	– 1 credit during each	
	semester enrolled except	
	summer.	

Courses taken for audit or courses graded Pass/Fail may not be used on the program of study.		
Also required:		
o Preliminary exam		
 Dissertation 		
 Final oral exam-Dissertation 		
defense		

Ph.D. Environmental & Natural Resource Sciences

Ph.D. research in Environmental and Natural Resource Sciences spans a range of the biological, physical, and social sciences that focus on understanding and managing the environment, including diverse aquatic and terrestrial ecosystems and natural resources such as plants and animal. The Ph.D. dissertation should be a significant contribution worthy of publication in refereed international journals. Specializations are offered in the areas such as:

- o Environmental policy and management
- Aquatic ecology, forest ecology
- Wildlife ecology, conservation, and biodiversity
- o Quantitative and spatial aspects of natural resources

Program Core Competencies and Student Outcomes for Ph.D. in ENRS

The Ph.D. program in ENRS is designed to educate, train and mentor students in six "core competency" areas within the Environmental and Natural Resource sciences.

- 1. Advanced knowledge of ecosystems, including biotic and abiotic structure and function, the roles of humans and societies, and applications to management.
- 2. Advanced knowledge in research methods and data analysis, including aptitude for assessing a wide range of environmental and/or social science data.
- 3. Ability to critically examine and creatively address interdisciplinary problems.
- 4. Advanced knowledge in the ethics of managing and conducting research in the environmental and natural resource sciences, actively incorporating issues of environmental and social justice, equity and inclusion.
- 5. Ability to effectively communicate knowledge of environmental and natural resource sciences to a wide range of audiences, through multiple modes of delivery, including written and oral formats.
- 6. A specialized subject area to be defined by the student and the student's Supervisory Committee.

Through the pursuit of attaining competence in these areas, students who successfully complete the Ph.D. in ENRS will be able to:

- Attain knowledge and expertise in core disciplinary areas, as well as appreciation and application of interdisciplinary approaches.
- Recognize, think critically about, and develop creative solutions to scientific problems.
- Master the field, laboratory, data analysis and theoretical skills necessary to perform the research.
- Write successful research grant proposals or otherwise obtain research funding.

- Effectively communicate the results of their research.
- Become effective teachers in field, laboratory and lecture-room settings.
- Prepare future students to successfully compete for jobs in industry, academia, and government.
- Contribute scientific leadership and expertise at the local, state and national levels.
- Become visible members of the scientific community by taking organizational and service roles.

Degree Program	Academic Requirements	
Ph.D. Environmental & Natural Resource Sciences https://environment.wsu.edu//phd/phd-environmental-natural-resource-sciences/	72 hours minimum of total credits, consisting of: o 15 hours minimum of graded coursework at 500- level if student has an M.S. Or 17 hours minimum of graded 500-level coursework if	
	student has only a B.S. o g hours maximum non- graduate 300/400 level graded coursework o 20 hours minimum of SOE 800 — 1 credit during each semester enrolled except summer.	
	Courses taken for audit or courses graded Pass/Fail may not be used on the program of study.	
	Also required:	
	 Preliminary exam Dissertation Final Oral Exam -Dissertation Defense 	

IV. Information for SOE Graduate Students

New Student Information

Residency

In-state tuition is considerably less expensive for Washington residents than for out-of-state students, so students with TA and RA appointments must establish residency immediately upon arrival to campus. Note that tuition waivers for RA and TA appointments starting the second year of study require that students are Washington State residents. Beginning one year prior to the semester during which you plan to apply for residency, you need "to establish ties" in Washington State. Within two weeks of arriving on campus, be sure to complete the applicable items in the list. After you have lived in Washington for one year, submit a residency questionnaire to the Graduate School along with <u>ALL of the following items</u>:

Checklist:

- Any home purchase agreements, lease agreements, rents receipts or cancelled checks, or letters from your landlord that verify physical residence in Washington for 12 consecutive months prior to the first day of the semester in which you submit the residency application.
- A copy of your Washington State driver's license. You must obtain a Washington State driver's license at least one year prior to the semester in which you apply.
 If you do not drive, provide a copy of your Washington State identification card
- A copy of your Washington State vehicle registration issued one year prior to the semester in which you apply. (A copy of your title will not suffice) Failure to provide this will likely result in a denial of Washington residency for tuition purposes.
- A copy of Washington voter registration issued one year prior to the semester in which you apply.
- Proof of having established a bank account in Washington. Any other document you have to show that you have established ties in Washington for the one year prior to the semester in which you apply (clubs, organization, etc.)

Financing Your Education:

Financial support for graduate students is most commonly available in the form of either a graduate teaching assistantship or research assistantship. Graduate assistantships normally include tuition waivers and health benefits, but do not include university fees each semester Fees per semester range between about \$433 per semester for Tri Cities and Puyallup Students to about \$1012/semester for Pullman students.

Teaching Assistantships

If you have been awarded a TA position, you will have already received a letter stating the terms of that appointment. Teaching assistantships are state-supported half-time, ninemonth position available to students with strong academic records. Graduate students on teaching assistantships work on average 20 hours per week teaching laboratory sections, grading homework and exams, or answering questions during office hours. Most teaching assistants are available for SOE 101 and SOE 110, but some TA's may aid in more advanced undergraduate courses depending on their specialization and experience.

Research Assistantships

Stipends are also available for graduate research assistantships (RAs) in which the work conducted is for an externally funded research project, usually acquired by the student's graduate advisor. If you have been awarded an RA position, you will have already received a letter with information regarding the terms of that appointment and listing the faculty member who has agreed to provide funding. Graduate research assistantships are half-time appointments that may, but not always, cover the summer months in addition to the academic year. In many cases, the results of the work are applied to the student's thesis.

Hourly Wage Positions

The selection process for awarding graduate teaching and research assistantships is highly competitive. For students who are not awarded research or teaching assistantships, hourly wage positions may be available to provide partial financial support through the department and the college. Work closely with the graduate coordinator and your academic advisor to keep abreast of funding opportunities.

Scholarship/Fellowship

The Graduate School and other academic departments offer a variety of funding opportunities for new and current students. Information is available: https://gradschool.wsu.edu/jobs/

For highly qualified applicants, graduate fellowships are available from the National Science Foundation (NSF), the Department of Defense, the Environmental Protection Agency, and other state and federal agencies, nonprofits, and private foundations. Such fellowships are highly competitive but provide graduate students with a greater degree of freedom to pursue creative research while in graduate school. Interested students should work with their faculty advisors on these applications.

SOE Grants and Scholarship

Each academic year, a few internal grants and scholarships are available to SOE graduate students. These provide additional support for graduate students for reasons such as paying semester fees not covered by your tuition waiver, buying books, and other relevant academic situations. Information about the application process will be made available late in the Fall semester. The due date for application is January 31st annually.

For International Students:

International graduate students often have special concerns that may affect their course of study, finances, and length of stay in the United States. The Office of International Programs is a valuable resource, and the staff can answer questions of concern. The Office of International Programs (IP) is located in Bryan Hall Room 108; the phone number is 335-4505. The IP webpage is located here: https://ip.wsu.edu/

If you are not a U.S. citizen, but hold permanent resident immigration status, temporary resident status, or refugee status, submit a copy of both sides of you Resident Allen Card, Form -1-94, Temporary Resident card or other verification of your status with immigration and Naturalization Service (INS).

For all international student issues such as tuition rates, residency requirements, employment, social security numbers and taxes, and learning English please contact the Office of International Programs directly.

Cooperative Courses at the University of Idaho (UI)

WSU and the University of Idaho operate a cooperative agreement by which WSU Pullman students can register at UI and take approved courses offered by UI at no extra charge. These are typically classroom courses taught on the nearby UI campus in Moscow, ID, or online. A list of UI courses available to WSU Pullman students is available at:

https://www.uidaho.edu/registrar/registration/coop

Please notify your faculty advisor and the graduate coordinator before signing up so that they can ensure you sign up properly and don't risk any graduate policy or enrollment issues.

An Important Note About UI Cooperative Courses & Continuous Enrollment:

Although U of I cooperative courses are accepted on Programs of Study and are an important part of our graduate student program, they do not count toward the 10 credits per semester needed to be considered in full-time enrollment. The 10 credits toward full-time enrollment can be from WSU only.

Students need to be sure to sign up for 10 WSU credits (800 or 700 research credits are fine) on top of the credits they take through the U of I Coop program to be considered for full-time enrollment tuition waivers & other benefits. **Failure to sign up for 10 WSU credits each** semester can result in the loss of tuition waivers, healthcare, and more.

<u>For example</u>, if a student is signed up for 8 WSU credits and 2 UI Credits, they <u>would not</u> be considered in full-time enrollment. They would need to add 2 more credits to their WSU course load, such as 2 credits of SOE 700.

Campus Resources

Pullman

Department	Contact Information
Office of Equal Opportunity	Office for ADA, Title IX, and EEO/AA Compliance; where to
	file a complaint or file a report on discrimination,
	accessibility compliance, sex & gender-based harassment &
	discrimination, and sex & gender- based violence
	<u>Oeo.wsu.edu</u>
	(409) 335-8288
WSU Ombudsman	An effective, informal, and neutral channel for students,
	staff and faculty to voice university related concerns
	ombudsman.wsu.edu
	(509) 335-1195
Dean of Students	Deanofstudents.wsu.edu
	French Administration 122
	(509) 335-5757
	deanofstudents@wsu.edu
Graduate and Professional	www.gpsa.wsu.edu
Student Association Women's Center	www.women.wsu.edu
women's center	www.women.wso.edo
	Wilson-Short Hall
	Ground Floor
	(509) 335-6849
Gender Identity/Expression	www.thecenter.wsu.edu/home/
and Sexual Orientation	CUB 401
Resource Center	(509) 335-8841
	(303) 333 0041
	glesorc@wsu.edu
Multicultural Student	www.mss.wsu.edu
Services	CUB 409
	COD 409
	(509) 335-7852
Veteran's Affairs	<u>Va.wsu.edu</u>

	Holland 120BA	
	509-335-1234	
	3 3 3 2 2 3 4	
	veterans@wsu.edu	
Access Center/Disability	www.drc.wsu.edu	
Resource Center	Washington Building 2 nd floor	
	(509) 335-3535	
Cougar Health Services	<u>Cougarhealth.wsu.edu</u>	
	Washington Building	
	(509) 335-3535	
	24 hr. telephone nurse line	
Cougar Safe Ride	<u>Cougarsaferides.wsu.edu</u>	
	(WSU) 267-SAFE	
	cougar.safe.rides@wsu.edu	
Food Pantry	Rosario's Place (food pantry, children's clothes & diapers)	
	https://women.wsu.edu/resources/rosariostars-place/	
	Wilson-Short Hall Room 8	
	(509) 335-6849	
	TDIO Food Pontry	
	TRIO Food Pantry	
	Lighty 260	
	Cougs Feeding Cougs	
	studentaffairs.wsu.edu/initiatives/	
	cougsfeedingcoug/	
Campus Police	Police.wsu.edu	
Campos i once	1 Once.wso.edo	
	(509) 335-8548	
	(303/333 0340	
	Emergency: 911	
Writing Center	https://writingprogram.wsu.edu/graduate-writing-center/	
	CUE 414	
	(509) 335-7959	
	gpwc@wsu.edu	
Center for Interdisciplinary	<u>Ciser.wsu.edu</u>	
Statistical Education &		
Research	Abelson Suite 227	
	Main Office 221	

(509) 335-1201
<u>ciser.info@wsu.edu</u>

Vancouver:

Department	Contact Information	
Graduate Student Association	Facebook-WSUVgrads – Listserve	
	https://lists,wsu.edu/mailman/listinfo/casgradstudents	
	(link to subscribe)	
	Vancouver Natural Sciences Grad Listserve	
Health Services	http://lists.wsu.edu/mailman/listinfo/science-gradstudents https://studentaffairs.vancouver.wsu.edu/student-	
Health Services	wellnesscenter/health-services	
	(360) 546-9238	
	24 hour nurse advice	
	(509) 335-3575	
	vanhealth@wsu.edu	
Counseling Services	https://studentaffairs.vancouver.wsu.edu/student	
	wellnesscenter/counseling-services	
	Classroom Building, Room 60	
	(360) 546-9238	
	and the Course of	
Access Center	van.counseling@wsu.edu https://studentaffairs.vancouver.wsu.edu/student-	
Access center	wellnesscenter/access-center	
	Classroom Building, Room 160,	
	(360) 546-9238 Center for Intercultural Learning	
	and Affirmation	
	van.access.center@wsu.edu	
Center for Intercultural Learning and	https://studentaffairs.vancouverwsu.edu/student-diversity	
Affirmation	Firstenburg Student Commons	
	Room 104	
	(360) 546-9182	
	van.studentdiversity@wsu.edu	

Veteran's Center	https://studentaffairs.vancouver.wsu.edu/veterans- affairs/veterans-center	
	Classroom Building Room 212	
	(360) 546-9570	
Cougar Food Pantry	https://studentaffairs.vancouver.wsu.edu/cougar-food- pantry	
	(360) 546-9779	
Campus Police	https://ww.vancouver.wsu.edu/public-safety/campus- police	
	Non-emergency: (360) 546-9001 Emergencies: 911	
	wsuvcops@wsu.edu	

Tri-cities:

Health and Wellness	Tri-cities.wsu.edu/healthandwellness	
	24-hour nurse advice	
	-	
	(509) 335-3575	
	Tri-Cities Campus Counselor	
	(509) 372-7153	
Access Services	Tricities.wsu.edu/current-students/disability/	
	Floyd 296C	
	(509) 372-7375	
	(3-3/3/-73/3	
Food Pantry	Tricities.wsu.edu/finaid/foodbank/	
	Floyd 269/ Cougar Cupboard	
Campus Safety & Security	Tricities.wsu.edu/safety	
	(509) 372-7234	
	non-emergencies	
	For emergencies	
	Call 911	

V. Grievances

Students should discuss problems with their advisor, Graduate Program Coordinator, or Associate Director for Graduate Studies. If problems are not resolved following those meetings, you should make an appointment to confer with the WSU ombudsman. The ombudsman provides information relating to university policies and procedures and facilitates the resolution of problems and grievances through informal investigation and mediation. The office does not replace or supersede other university grievance, complaint, or appeal procedures, but is another avenue available to graduate students who wish to seek assistance in resolving concerns related to their graduate program. The contact information for the University Ombudsman Office may be accessed at http://wsu.edu/-ombuds/

Graduate students should refer to the **Educational Policies and Procedures Manual (EPPM)**, Chapter IV, Sections 104 and 105 if they have a complaint about instruction or grading. This document can be found online at http://facsen.wsu.edu/eppm;

The **University Grade Appeals Board**, an official committee of the University President, function to review academic grade appeals forwarded by any departmental chair, dean Graduate School Dean, or university ombudsman. A detailed description of this committee and its processes may be accessed at http;//presiden.wsu.edu/office presidential-committee/academic-gradeappeals-board.html/

For more information, see the Graduate Student Rights and Responsibilities at https://gradschool.wsu.edu/chapter-twelve/

V. Overview of Research Facilities in SOE

WSU Pullman:

On the Pullman campus, the faculty and students are located in Troy Hall, Heald Hall, Fulmer Hall, PACCAR and the Webster Physical Sciences Building. The SOE administrative offices are located in Webster.

The **GeoAnalytical Laboratory** in the Webster Science Building is nationally and internationally renowned. Equipment in the Laboratory includes a Thermo-ARO X-ray fluorescence spectrometer, a JEOL JXA-8500F field-emission electron microprobe, an Agilent 7700 quadrupole ICP-MS, a high resolution ThermoFinnigan Element2 ICP-MS, a Thermo-Finnigan Neptune multicollector of the 3 ICP-MS and a new wave UP213 laser ablation system that can be used in any of the three-ICP-MS. Additional equipment includes two Thermo-Finnigan-MAT gas source mass spectrometers, a Siemens X-ray powder diffractometer, and full sample preparation and clean lab facilities for isoptop geochemistry.

The **E.H.Steffen Center** is a 58-acres field and laboratory research and teaching facility located on the east edge of WSU Pullman campus. The facility includes controlled environment greenhouses equipped with supplemental lighting, connecting head house, controlled environment germinators, laboratories, classroom, offices and shop area. The shop contains metal and wood power tools, and plant processing equipment, including 2 large drying ovens. The E.H. Steffen Center also includes indoor and outdoor captive wildlife facilities, several small forest plantations, wetlands, uplands and numerous specialized planting areas.

The **Wildlife Habitat and Nutrition Lab** located in Vogel Hall provides laboratory services and training for analyzing the nutritional and chemical components of plant, forage, and animal samples (e.g., protein, fat, fiber, ash, energy, fiber, tannins, digestibility).

The **WSU** Bear Research, Education and Conservation Center is a one-of-a-kind facility that aims to provide information and understanding for bear conservation around the world. Our research covers a range of disciplines including nutrition, physiology, ecology, behavior, reproduction, learning and memory.

The **Wild Ungulate Facility** supports a variety of research on the nutritional, reproductive and habitat ecology of deer, with the goal of improving conservation and management of these native species. The facility includes five pens spanning 8 acres and a barn with 3 large and 7 smaller indoor pens. The Wild Ungulate Facility currently supports a herd of tame mule deer, black-tailed deer and white-tailed deer.

WSU Vancouver

On the Vancouver campus, SOE faculty, students and staff are located in the Science and Engineering Building. (VSCI). VSCI houses all SOE faculty offices and laboratory spaces, as well as most graduate student offices. Shared campus research facilities available to SOE graduate students include two 3,150 foot research greenhouse with six independently-controlled growth rooms and large head house, a molecular/genetic analytical laboratory, microscope and dark room, several Conviron environmental chambers, walk-in freezers and refrigerators, as well as a machine shop. Additional facilities are under the direction of particular SOE faculty members, including a sediment core incubation facility and several small research vessels for work in lakes, rivers and the coastal ocean.

WSU Tri-Cities

On the WSU Tri-Cities campus, SOE personnel offices and laboratories are located in the East Building. SOE research facilities include the Food and Environmental Quality Lab, an environmental analytical laboratory for studying organic contaminants like pesticides. Another facility is the Biogeochemistry Lab dedicated to aquatic ecology research and nutrient cycling. Other cooperating facilities include a Microbial Ecology Lab dedicated to the studies of the role of Arbovascular mycorrhizae in ecosystem restoration and the Bioproducts Science and Engineer Lab dedicated to research to identifying non-energy products that can be used to promote energy sustainability.

WSU Puyallup Research and Extension Center

The Puyallup Research and Extension Center plays a vital role in providing high quality research, extensions, and instruction programs to the people of Washington state. These programs support technological innovation, food production, natural resource stewardship, youth development, human nutrition, and community enhancement. The Center's faculty, staff, and graduate students from 11 academic departments address complex biological, ecological and social issues.

The 160-acre main campus is comprised of laboratories and offices, state-of the -art greenhouses, a Master Gardener demonstration garden, the Washington Stormwater Center and associated Low Impact Develop (LID) research installations six acres of certified organic farmland, and several acres of agricultural and natural resource plots. There are an additional 112 acres of research plots including turfgrass, berry breeding and disease, and poplar research at the R.L Goss Farm. The Center houses multiple world class research and extension programs, as well as much of the leadership for the many statewide Extension and outreach programs.

VI. WSU Center for Environmental Research, Education and Outreach

Building on grassroots energy and passion, CEREO serves as a progressive hub for environmental research, education, and outreach at Washington State University. CEREO is a progressive network with more than 350 faculty, staff, students, and industry leaders working to resolve environmental issues through collaborative partnerships. Guided by a roster of distinguished scientists, CEREO seeks to apply innovative technologies and management tools to the ever-growing challenges of global climate change and environmental sustainability.

Faculty within the School of the Environment work closely with CEREO to foster interdisciplinary collaborations in all aspects of Earth, environmental and natural resource science. See http://www.cereo.wsu.edu for more information about CEREO activities and programs.

VII. SOE Graduate Program Administration

The graduate programs operated by the School of the Environment are administered according to Program Bylaws approved by the Graduate School. Copies of bylaws for each degree program can be found at the departmental offices or from the Associate Director for Graduate Programs. Additionally, graduate students must abide by and meet the regulations and policies set forth in the current Graduate School Policies and Procedures Manual. The manual is available at: https://graduschool.wsu.edu/documents/2107/03/policies-proceduresmanual2107

The Graduate School: This web site has an abundance of important information you need to know concerning your graduate studies at Washington State University, including but not limited to: financing your education, residency requirements, health services, housing, child care and international student concerns. The Graduate School Policies and Procedures Manual is also found here. https://gradschool.wsu.edu/

One of the most important components of the Graduate School website is the "Forms" page. The forms found here will be used for critical official step in your graduate program. Typically, these forms will be signed by you (student) you faculty advisor (committee chair), members of your committee, and the Associate Director for Graduate Programs. These forms will be discussed in greater detailed later in this document.

https://gradschool.wsu.edu/facultystaffresrouces/18-2

Office of the Registrar: This is the main academic website It has general announcements and lists upcoming academic events and links to the time schedule, academic calendar, academic regulations, the University Catalog, residency information and more. http://registrar.wsu.edu/

Time Schedule (schedules of classes): Includes detailed course listings, information on registration procedures, payment of fees, textbooks, and the University academic calendar. http://schedules.wsu.edu/

SOE Key Faculty and Staff Directory

Name	Title	Location	Email	Phone
Dr. Allyson	Divastav	\\/ a b a+ a v	A be call Queen a dec	Number
Dr. Allyson	Director	Webster	<u>Abeall@wsu.edu</u>	(509)
Beall King		1229 (Pullman)		335-3009
Dr. Lisa	Associate	Heald 425	Shipley@wsu.edu	(509)
Shipley	Director of	(Pullman)	<u>smpley (a wso.eao</u>	335-9182
Simpley	Graduate	(1 01111111)		333 3102
	Studies			
Dr. John	Program Leader	VSCI 230B	John_harrison@wsu.edu	(360)
Harrison	(Vancouver)	(Vancouver)		546-9210
Dr. Cheryl	Program Leader	VSCI 230K	schultzc@wsu.edu	(360)
Schultz	(Vancouver)	(Vancouver)		546-9525
Dr. Allan	Professor & Tri-	East 128 (Tri-	alfelsot@wsu.edu	(509)
Felsot	Cities Graduate	Cities)		332-7365
	Coordinator			
Dr. Kara	Associate	Fulmer	kmwhitman@wsu.edu	(509)
Whitman	Director of	206BC		335-7846
	Undergraduate	(Pullman)		
	Programs			
Jessica	SOE	Webster	<u>JBillings1976@wsu.edu</u>	(509)
Billings	Administrative	1226		335-3009
	Manager	(Pullman)		
Denise	Graduate	Webster	<u>Denise.Bickford@wsu.edu</u> and	(509)
Hopkins	Coordinator	1226	Soe.academics@wsu.edu	335-6160
	(Pullman,	(Pullman)		
	Puyallup, Tri			
C	Cities)	Caianas	Company managed Course and the	NI/A
Casper	Graduate	Science &	Casper.menson@wsu.edu	N/A
Menson	Coordinator (Vancouver)	Engineering	And Van cas gradeoordinators@wsu.odu	
	(varicouver)	Building (Vancouver)	Van.cas.gradcoordinators@wsu.edu	
Christopher	Fiscal	Webster	Christopher.Riddle@wsu.edu	(509)
Riddle	Technician	1226	Chinstophier.Madre(@wso.edo	335-6227
Ridule	(Pullman)	(Pullman)		333-044/
	(i diiiidii)	(i dilitiali)		

SOE Faculty: Please see https://environment.wsu.edu/people for a complete list of current SOE faculty and other personnel.