

From: noreply@wsu.edu
To: [curriculum.submit](#)
Subject: 643145 Environment Requirements Revise - Revise or Drop Graduate Plan
Date: Friday, April 2, 2021 9:18:19 AM
Attachments: [2021.04.02.09.15.43.81.FormData.html](#)
[2021.04.02.09.15.43.13.currentCatalogFile_SOE_PhD_ENRS_Program_Description_FINAL_for_su.docx](#)

Lisa Shipley has submitted a request for a major curricular change. His/her email address is: shipley@wsu.edu.

Requested change: Revise or Drop Graduate Plan

Degree: Ph.D. in Environmental and Natural Resource Sciences

Title: NA

Requested Effective Date: Fall 2022

Revise plan requirement: Yes

Dean: Swindell, Samantha - Assoc Dean - CAS, Zack, Rich - Assoc Dean - CAHNRS

Chair: Keller, Kent – Director – Environment ,

Catalog Subcommittee
Approval Date

AAC, PHSC, or GSC
Approval Date

Faculty Senate
Approval Date

From: [Keller, Kent](#)
To: [curriculum.submit](#)
Cc: [Swindell, Samantha](#)
Subject: Re: 643145 Environment Requirements Revise - Revise or Drop Graduate Plan
Date: Friday, April 2, 2021 10:52:55 AM

I approve. Thanks – Kent.

From: "curriculum.submit@wsu.edu" <curriculum.submit@wsu.edu>
Date: Friday, April 2, 2021 at 9:18 AM
To: Kent Keller <cckeller@wsu.edu>
Cc: "Swindell, Samantha" <:sswindell@wsu.edu>
Subject: 643145 Environment Requirements Revise - Revise or Drop Graduate Plan

Keller, Kent – Director – Environment ,

Swindell, Samantha - Assoc Dean - CAS,

Lisa Shipley has submitted a request for a major curricular change.

Requested change: Revise or Drop Graduate Plan

Degree: Ph.D. in Environmental and Natural Resource Sciences

Title: NA

Requested Effective Date: Fall 2022

Revise plan requirement: Yes

Both Chair and Dean approval is required to complete the submission process. Please indicate that you have reviewed the proposal by highlighting one of the statements below and **reply all** to this email. (curriculum.submit@wsu.edu.) [Details of major change requested can be found in the attached supplemental documentation]

1. I approve this proposal in its current form.
2. I approve this proposal with revisions. Revisions are attached.
3. I do not approve this proposal. Please return to submitter.

If you do not respond within one week, you will be sent a reminder email. If no response is received within three weeks of the submission date, the proposal will be returned to the submitter.

Thank you for your assistance as we embark on this new process. If you have any

From: [Swindell, Samantha](#)
To: [curriculum.submit](#); [Keller, Kent](#)
Subject: RE: 643145 Environment Requirements Revise - Revise or Drop Graduate Plan
Date: Monday, April 12, 2021 11:09:24 AM

1. I approve this proposal in its current form.

From: curriculum.submit@wsu.edu <curriculum.submit@wsu.edu>
Sent: Friday, April 2, 2021 9:16 AM
To: Keller, Kent <ckkeller@wsu.edu>
Cc: Swindell, Samantha <sswindell@wsu.edu>
Subject: 643145 Environment Requirements Revise - Revise or Drop Graduate Plan

Keller, Kent – Director – Environment ,

Swindell, Samantha - Assoc Dean - CAS,

Lisa Shipley has submitted a request for a major curricular change.

Requested change: Revise or Drop Graduate Plan

Degree: Ph.D. in Environmental and Natural Resource Sciences

Title: NA

Requested Effective Date: Fall 2022

Revise plan requirement: Yes

Both Chair and Dean approval is required to complete the submission process. Please indicate that you have reviewed the proposal by highlighting one of the statements below and **reply all** to this email. (curriculum.submit@wsu.edu.) [Details of major change requested can be found in the attached supplemental documentation]

1. I approve this proposal in its current form.
2. I approve this proposal with revisions. Revisions are attached.
3. I do not approve this proposal. Please return to submitter.

If you do not respond within one week, you will be sent a reminder email. If no response is received within three weeks of the submission date, the proposal will be returned to the submitter.

From: [Zack, Richard Stanly, Jr](#)
To: [curriculum.submit](#)
Subject: Re: 643145 Environment Requirements Revise - Revise or Drop Graduate Plan
Date: Friday, April 2, 2021 11:16:52 AM

Approved

Rich Zack

From: "curriculum.submit@wsu.edu" <curriculum.submit@wsu.edu>
Date: Friday, April 2, 2021 at 12:18 PM
To: "Zack, Richard Stanly, Jr" <zack@wsu.edu>
Cc: "curriculum.submit" <curriculum.submit@wsu.edu>
Subject: 643145 Environment Requirements Revise - Revise or Drop Graduate Plan

,

Zack, Rich - Assoc Dean - CAHNRS,

Lisa Shipley has submitted a request for a major curricular change.

Requested change: Revise or Drop Graduate Plan

Degree: Ph.D. in Environmental and Natural Resource Sciences

Title: NA

Requested Effective Date: Fall 2022

Both Chair and Dean approval is required to complete the submission process. Please indicate that you have reviewed the proposal by highlighting one of the statements below and **reply all** to this email. (curriculum.submit@wsu.edu.) [Details of major change requested can be found in the attached supplemental documentation]

1. I approve this proposal in its current form.
2. I approve this proposal with revisions. Revisions are attached.
3. I do not approve this proposal. Please return to submitter.

If you do not respond within one week, you will be sent a reminder email. If no response is received within three weeks of the submission date, the proposal will be returned to the submitter.

Thank you for your assistance as we embark on this new process. If you have any

Ph.D. in Environmental and Natural Resource Sciences

- **Revise plan**

Rationale:

The School of the Environment (SoE) was created in 2013 as a merger of the School of Earth and Environmental Sciences and the Department of Natural Resources. Over the past 8 years the faculty and staff in SoE have worked to combine and leverage their wide-ranging disciplinary expertise toward building a single School, with a shared vision, mission, and goals. An early step in this process was to combine all of the pre-existing B.S. degrees into a single, interdisciplinary degree (B.S. Earth and Environmental Sciences), with multiple majors that reflect the disciplinary strengths within the School. We have submitted our proposal to revise our M.S. degrees within SoE to reflect these strengths, and now we are proposing to revise our Ph.D. programs.

In 2018, the Ph.D. programs reverted to graduate school minimums, but the editing in red within the program requirements below show changes from the last approved Ph.D. in ENRS. The main changes include 1) a reduction in the required number of hours of graded graduate course work for a student without an M.S. from 27 to 24, 2) the addition of SOE 501 (Graduate skills seminar) for students without an M.S. in a related subject, 3) minor changes to the description of the core competencies, and 4) the ability of students to meet the core competencies through not only new coursework, but other activities such as preliminary exam, presentations, dissertation and dissertation defense, and previous coursework, workshops as approved by the student's supervisory committee.

School of the Environment Ph.D. Environmental and Natural Resource Sciences Program and Degree Description

Program Description

The Ph.D. in Environmental and Natural Resource Sciences (ENRS) in the School of the Environment (SOE) provides opportunities for doctoral study within and across the biological, physical and social sciences, under the guidance of SOE faculty members who cooperate and often collaborate to foster the exchange of knowledge and embrace interdisciplinary education. Ph.D. ENRS students study diverse aquatic and terrestrial ecosystems, including plants and animals that are managed as natural resources, with the expectation that the dissertation research makes a significant contribution to the Environmental and Natural Resource sciences, worthy of publication in refereed international journals.

Program Objectives

The objectives of the Ph.D. program in ENRS are to:

- Provide an atmosphere of scholarship coupled with research opportunities that will train professionals capable of responding to the complicated issues of use, management and protection of the environment and its natural resources.

- Foster interdisciplinary research in the environmental and natural resource sciences and facilitate a better understanding of the ecological, social and economic relationships inherent in environmental and natural resource issues.
- Train scientists who will assume leadership roles in the research and management of natural resources and the environment.
- Prepare students to work with, and within, public and private entities responsible for the management or protection of natural resources and the environment.

Program Core Competencies and Student Outcomes

The Ph.D. program 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 both biophysical structure and function, and roles of humans.~~ 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.~~ Advanced knowledge in research methods and data analysis, including aptitude for assessing a wide range of environmental and/or social science data.
3. ~~Advanced interdisciplinary cognizance/appreciation.~~ Ability to critically examine and creatively address interdisciplinary problems.
4. ~~Advanced knowledge in environmental and natural resource issue and ethics. To be met by completion of SOE 594.~~ 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 Requirements

Major Advisor and Supervisory Committee

Students are required to find a Major Advisor from the SOE graduate faculty who is willing to supervise the student's dissertation research before being admitted to the program. The Major Advisor and student will together identify potential members of a Dissertation Supervisory Committee, and the Major Advisor will serve as Chair. The committee will consist of at least three members, including the Chair, who each must be SOE Graduate Faculty. The committee also has the responsibility for assessing the student's dissertation proposal, the Ph.D. preliminary examination, and the qualifying final examination for the Doctor of Philosophy degree.

Curriculum

The coursework required for the Ph.D. in ENRS supports the academic development and training of each student toward meeting the core competencies described above, as well as the completion of a dissertation. Students may choose courses offered across any of the WSU colleges, in consultation with their Major Advisor, in order to best prepare them for meeting the Ph.D. ENRS core competencies, in consideration of their prior academic and/or professional experiences and proposed dissertation research area.

Ph.D. in Environmental and Natural Resource Sciences Degree requirements

- At least 72 hours minimum total credits, consisting of:
 - At least 15 hours minimum graded course work at the 500-level for students entering with an M.S. in a related discipline OR
 - At least ~~27~~ 24 hours minimum graded course work at the 500-level for students without an M.S. in a related discipline
 - Up to ~~6~~ 9 hours of non-graduate (300-400 level) graded course work is allowed
 - ~~Must include course work in five areas of competency in a core curriculum:~~
 - ~~Ecosystems~~
 - ~~Research methods~~
 - ~~Issues/ethics~~
 - ~~Interdisciplinary knowledge~~
 - ~~Subject area of student specialization~~
 - If a student does not have an M.S. degree, SOE 501 (Graduate Skills Seminar; 1 hour) must be taken during the first year of the student's program (not graded)
 - 20 hours minimum of SOE 800 (Ph.D. research, thesis or examination), 2 hours of which must be taken during the semester of the final exam (not graded).
 - Courses taken for audit may not be used on the program of study
 - Preliminary Exam
 - Final oral exam - Dissertation defense

Program of Study

The Program of Study is a degree plan submitted to the WSU Graduate School listing the student's completed, current, and proposed coursework to meet the degree requirements, and must be signed by each member of the student's Supervisory Committee. Specific courses to be included in the Program

of Study are determined as a joint effort between the student, his/her major Major Advisor, and the other members of the committee to meet the particular needs of the student, as well as to meet the curricular requirements of SOE and the Graduate School. The Program of Study must be submitted to and approved by the WSU Graduate School by the end of the student's 2nd year in the program, unless otherwise arranged according to SOE and Graduate School policy.

More broadly, each Ph.D. ENRS student must complete a core curriculum consisting of prior and/or new course work, research activity, or other experiences that will yield competency in the six ENRS competency areas, as defined and agreed to by the Major Advisor, Supervisory Committee, and the student.

Dissertation Proposal

Each Ph.D. ENRS student must submit a Dissertation Proposal to their Supervisory Committee, prior to scheduling the required preliminary examination. The format of the proposal may be determined by the student, in consultation with their Major Advisor, but must include descriptions of research question(s), supporting background information and context, proposed methodology, and the significance of the proposed research to the Environmental and Natural Resource sciences. Each committee member will review the proposal and provide comments prior to the preliminary examination. The committee must approve the dissertation proposal before the student may advance to candidacy in the Ph.D. ENRS program.

Preliminary Examination

Each student is required to pass a preliminary examination in order to become a candidate for the Ph.D. degree. This examination will be taken after most (preferably all) of the required course work has been completed, and upon submitting and receiving comments on a dissertation research proposal. It is expected that students will take the preliminary exam by the end of the 3rd year of their program, or at an alternate time determined in consultation with and approved by their Major Advisor and Supervisory Committee.

The assessment will consist of a written and oral examination, according to a format determined by the student's committee and shared with the student at least 3 months prior to the exam. Both components will focus on the student's proficiency in the competency areas, and their preparation for pursuing the dissertation research as outlined in their dissertation proposal. If the student fails to pass the examination after two attempts, SOE will recommend to the Graduate School that the student be disenrolled from the program.

Advancing to Ph.D. Candidacy

Upon successful completion of the preliminary exam, and the approval of the dissertation proposal by the Supervisory Committee, a student may advance into the candidacy stage of the Ph.D. ENRS program, during which the student will complete their dissertation research.

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 the public on their dissertation research, followed by a closed defense of their dissertation to the Supervisory Committee. As required by the WSU Graduate School, students may not schedule the dissertation defense to occur less than 3 months after passing the preliminary exam, nor schedule the defense to occur more than 3 years after the date of satisfactory completion of the preliminary examination. Exceptions to extend the time to degree completion beyond the 3-year limit may be requested, according to WSU Graduate School Policies and Procedures described on their website.

Within five business days of passing the defense, each student must submit their dissertation to the Graduate School, in any of the formats the School dictates as described on their website.

*** Because a student only has five working days after defending their thesis to turn in the final version to the Graduate School, all substantial changes recommended or required by each committee member should be addressed *prior* to defending the dissertation in the final exam. Consequently, **committee members need to have read the dissertation prior to scheduling a defense date**. This means committee members must receive copies of the final draft dissertation at least 14 days before scheduling the final exam.

Response to questions from the catalog sub-committee

1. The reasoning behind the request to drop 3 credit hours from 27 to 24 of graded 500 level coursework for students without a MS.

The SOE faculty arrived at a minimum course requirements for Ph.D. students without an M.S. by considering 1) that students with an M.S. are required to take 15 credits (Graduate School minimum), thus students without should be expected to take more credits, and 2) the Graduate School minimum for Ph.D. students without an MS is 17 credits. As a group, we decided that a minimum of 24 graded credits was a reasonable compromise that allowed Ph.D. students without an MS to acquire additional coursework while still emphasizing the scholarly/scientific aspects of their Ph.D. program acquired through research credits.

2. How does the credits change affect the overall credit/degree requirements?

The reduction in minimum course credits for Ph.D. students without an M.S. does not affect the overall degree requirements of 72 credits (Graduate School minimum). However, these students can fill their remaining credits with either 3 more research credits or additional coursework based on their Graduate Committee recommendations.

3. Why SOE 501 skills seminar is not graded?

This course was designed to introduce new graduate students to the SOE graduate program rather than emphasize any particular scholarly or scientific content. This 1-credit course focuses on cohort-building, professional skills, and discussion, therefore the SOE faculty concluded that past fail made the most sense for this course. Although students that already possess an M.S. are welcome to take the class if they choose, it is required for anyone new to graduate school, thus Ph.D. students without a prior M.S.