Environmental Resources & Policy PhD program

Southern Illinois University Carbondale

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PROGRAM INFORMATION

AREAS OF CONCENTRATION

Climatology Students who take the Climatology concentration will study the past, present, and future of Earth's atmospheric system that, in interaction with the land and the hydrosphere, generate long-term weather patterns-that is climate. Methods for investigating paleoclimates, such as dendrochronology, ice and sediment cores, will be emphasized along with use of Atmospheric-Oceanic General Circulation Models for the investigation of future climate change.

Earth and Environmental Processes

Students who select this specialization combine elements of the modern, process-oriented geology curriculum (sedimentology, geomorphology, petrology, basin analysis, seismology, potential-field geophysics, organic and water geochemistry, tectonics, and paleo-environmental analysis) with allied disciplines to prepare for research into a broad range of environmental studies. This concentration emphasizes the geological process approach to analysis of such problems as flooding, earthquake hazards, land-use practices, aquifer degradation, and mine site remediation.

Ecology

Students who take the ecology concentration will work with faculty from the Center for Ecology. Ecology studies the complex relationships between organisms, populations, communities, ecosystems, biomes and the biosphere, which are deeply affected by human decisions, actions and policies-actions and policies which are themselves influenced by the environment. ER&P-ecology students will focus on the ecosystem-society relationship, such as the provision and management of ecosystem services. As the human footprint widens, and active management of ecosystems becomes more policy-relevant, understanding these connections is a vital component of training the next generation of scientists.

Energy and Mineral Resources

Energy and mineral resources include hydrocarbons (oil, natural gas, coal, and their naturally occurring and manufactured derivatives), and both metallic and non-metallic (industrial) mineral and rock deposits. This specialization comprises studies of the origins and physical occurrences of these resources, together with technologies and policies concerning their extraction and use.

Environmental Policy and Administration

Making and administering environmental policy has become an exceedingly complex arena where science interacts strongly with law and the political process. Students enrolled in this concentration will examine these interactions and complexities with a focus on the socioeconomic driving forces that generate resource use and attendant environmental problems, and the political and legal frameworks through which societies make and implement public policy in the environmental field.

Forestry, Agricultural and Rural Land Resources

Many environmental problems, challenges and policies take place on rural landscapes where forestry and agricultural land uses are intermingled with non-farm rural residents and others. Many rural land uses contribute to environmental problems and the development of environmentally benign and sustainable methods of production are goals of environmental policy. Consequently, through this concentration, students will examine the interaction among environmental quality, production, and the process and institutions of public policy.

Geographic Information Systems and Environmental Modeling
Modern environmental sciences, management and planning rely on acquisition, analysis and integration of large data bases using remote sensing, digital image processing, geographic information systems and environmental modeling. The purpose of this concentration is to enable students to develop high skills in these areas and to apply them to one or more natural resource domains (e.g., hydrogeology, forest inventory, spatial decision support systems, environmental

Water Resources
As a critical flow resource, water is of central importance to society and, through hydrologic processes, is involved in many environmental issues from water shortages in populous arid regions to ground water quality concerns associated with agri-chemical use. Through this concentration, students will examine the interaction among hydrologic processes, environmental quality, water resource use, and the processes and institutions of the private sector and public policy that govern water resources.

CURRICULUM

Credit Hour Requirements
Core: 12 credit hours of core curriculum (ERP502, ERP598 and a methodology and a science course)
Concentration: 24 credit hour minimum (only 3 hours of ERP599 may be credited toward the degree)
Dissertation Hours: 24 credit hours in ERP600
Total: 60 credit hours

SIUC Students

All new students must take the core curriculum courses the first semester they are offered. The ERP curriculum is 60 credit hours of both core and concentration-specific courses. The ERP core consists of four courses. The primary course required of all first-year students in the fall semester is ERP 502-Environmental Decision Making. The other required core courses include ERP598-Applied Environmental Resources & Policy, a methodology course and a science course. **ERP598 is taken each semester until passing the comprehensive exams**. Only 3 credits count toward the degree. The methodology and science courses should be chosen by the student after consultation with their advisor. Beyond the core requirements, students are encouraged to work closely with their faculty advisor and committee to identify appropriate courses.

SIUE Students

The required core course work includes: ERP502-Environmental Decision Making, ERP598-Applied Environmental Resources & Policy, and either the methodology or science course must be taken from SIUC. The 24 hours of concentration course work will be taken in consultation with the student's graduate committee. The student must register for 12 of the 24 hours of dissertation research hours at SIUC and the remaining 12 hours at SIUE. SIUE students will register for ERP601 at SIUC without any charge.

All Students

No more than six hours of deferred dissertation credit may be applied toward fulfillment of the 24-semester hour residency requirement. *No doctoral student will be permitted to sign up for more than six hours of dissertation until candidacy has been achieved.* **Any dissertation hours registered for above the six permitted prior to candidacy will not be counted toward completion of the doctoral degree.**

The lists below provide examples of possible methodology and science courses at SIUC but are not meant to be comprehensive.

Methodology courses *(examples only):*
ECON 567a	Econometrics
QUAN 506 or 507	Inferential Statistics
GEOG 512	Applied Geographic Statistics
GEOL 513	Data Analysis in Earth Sciences
SOC 512	Social Research Methods and Design
ZOOL 557	Biostatistics

Science courses *(examples only):*
FOR 508	Historical Ecology
FOR 531	Disturbance Ecology
GEOG 534	Water Resources Hydrology
GEOG 536	Natural Hazards
GEOL 524	Sedimentary Geology
PLB 443	Restoration Ecology
PLB/ZOOL 444	Community Ecology and Analysis
PLB/ZOOL 445	Wetland Ecology and Management
PLB 545	Ecosystem Ecology
ZOOL 411	Environmental Risk Assessment
ZOOL 521	Stream Ecology
ZOOL 569	Advanced Fisheries Management

Residency
The residency requirement for the doctorate must be fulfilled after admission to the doctoral program and before formal admission to doctoral candidacy. The residency requirement is satisfied by completion of 24 semester hours of graduate credit on campus as a doctoral student within a period not to exceed four calendar years. No more than six hours of deferred dissertation credit may be applied toward fulfillment of the 24semester hour residency requirement. *No doctoral student will be permitted to sign up for more than six hours of dissertation until candidacy has been achieved.* **Any dissertation hours registered for above the six permitted prior to candidacy will not be counted toward completion of the doctoral degree.** Credit earned in concentrated courses or workshops may apply toward fulfillment of the residency requirements if the student is concurrently registered for a course spanning the full term. No more than six semester hours of short course or workshop credit may be applied to the 24-semester hour residency requirement.

Requirement when leaving campus or enrollment in ERP 601

Any ERP student who **intends to leave campus prior to completion of their degree** or **not enrolled in classes** for the following semester **must notify** the **ER&P program** at **least six weeks** prior to the end of the semester. The program will then inform the students via electronic communications and in writing of all requirements they need to fulfill to complete their degree.

Completing the degree after leaving campus or enrollment in ERP 601

Before being reinstated into the program, returning students must submit a plan for completing the program to the ERP Director. The plan should include the following:

1. A summary of the research they have completed toward the dissertation;
2. A summary of the research they need to undertake to complete the dissertation;
3. Identification of a potential primary advisor/dissertation chair that is current faculty at SIU; 4. Identification of a potential dissertation committee members; and
5. A timeline for their anticipated completion of the program.

COMPREHENSIVE EXAMS AND DEFENSES

Graduate Faculty Committee

SIUC Students

SIUC ERP students must have a 5-member inter-departmental committee that should be developed in cooperation with their advisor. The graduate committee must include at least four SIUC faculty members and may have a maximum of three members from the same department. Qualified researchers from outside SIUC are eligible to be committee members. A non-academic person with practical expertise can be usefully included as a sixth member. Committee members from outside organizations must send a current CV to the ERP office specialist to obtain adjunct status approval from the Graduate School. The Graduate Faculty Committee Form can be found on the Graduate School website under Forms, then Graduation Forms or . graduate-faculty-committee-approval-form-updated.pdf (siu.edu)

SIUE Students

SIUE ERP students must have a 5-member committee that should be developed in cooperation with their advisor. The graduate committee will consist of five member, two SIUE graduate faculty, two SIUC graduate faculty, and additional member from either institution or an external member who holds graduate status or temporary graduate status as appropriate from the respective institution. A non-academic person with practical expertise can be usefully included as a sixth member. Committee members from outside organizations must send a current CV to the ERP office specialist to obtain adjunct status approval from the Graduate School. The Graduate Faculty Committee Form can be found on the Graduate School website under Forms, then Graduation Forms or graduate-faculty-committee-approval-form-updated.pdf (siu.edu)

Comprehensive Exam

The dissertation proposal must be approved by the student's advisor before they can take the comprehensive (comps) exam. The exam should be taken within three months following the completion of all required coursework at a time determined by the student's dissertation advisor, in consultation with the ERP Director. Comps are difficult and standards are high, especially given the demands of an inter-disciplinary degree. It is wise to discuss expectations with each committee member and perhaps take an independent study course to prepare for prelims, and have a "mock" oral exam. When ready to take the exams, see the office specialist to make arrangements.

Written and oral exams will consist of two parts. The instructor of ERP502 will give questions regarding the core curriculum and the student's committee members will provide questions on the student's dissertation proposal. Exams shall be conducted in the following manner:

Written exam

The written comprehensive exam consists of three 4-hour sessions taken within a seven-day period. Students have the option of typing or handwriting their exam answers. Laptops are checked out from the ERP office. The format of the questions are at the discretion of each committee member.

The committee Chair collects all exam questions and prepares the exam. The questions are then sent to the office specialist who hands them out and oversees the exam. After each session, the student can take a copy of their responses to make **grammatical revisions only** and prepare a final draft. **Any other changes to the content of exam will result in failure of the exam.** Diagrams and illustrations can be hand drawn or created on the computer. Images cannot be imported or scanned into the final draft. Students working away from SIUC may take their written exams at their place of employment. The employer must supervise the student.

The first day of exam should be the core curriculum questions and questions from one of the committee members. The other two days can be divided into two committee member's questions each day. To pass, the student must pass the core curriculum **and** four out of the five committee questions.

Repetition of the written exam

The student will have one opportunity to retake the portions of the written exam not passed on the first try. This will occur during the semester following the first attempt. If the student fails on the second try, they will be dismissed from the program.

Oral Exam

Once the student passes the written exam, the oral exam will be scheduled. This will normally occur approximately three weeks after the written exam. There will be six examiners: the five members of the dissertation committee, plus the instructor of ERP502. A maximum of two examiners can be present by telephone or other form of electronic communication. The student must be physically present.

The exam is scheduled for two to three hours. The questions will cover, but will not be limited to, the

ERP core curriculum and the student's dissertation proposal. The format is usually, but not limited to, committee members having 15 minutes for their initial questions. After which, the remaining time will be used for additional questions and committee evaluation of the student. At the close of the exam, the committee will vote on the student's performance. The student will pass if they receive at least five positive votes from the six members.

Repetition of the oral exam
If the student fails the oral exam, they will have one opportunity to retake it. This will occurs during the semester following the first attempt. If the student fails on the second try, they will be dismissed from the program.

Learning Objectives for Exams
1. Understanding of environmental problems
    A. Understanding of critical issues and analytical approaches in environmental sciences and policy.
    B. Ability to answer questions at a level equivalent to the level of expertise presented in graduate textbooks and professional literature.

2. Analytical Skills
    A. Presentation of critical assessment of the literature.
    B. Ability to integrate material from various sources into coherent, comprehensive answers.
    C. Use of references.

3. Communication Skills
    Thought patterns are logical and the manner in which information is provided is unambiguous; grammar and pronunciation are correct.

4. Professionalism
    Individual responsibility and reliability, (e.g., attending classes and appointments, completing GA assignments on time, developing and maintaining habits of courtesy and ability to contribute to group efforts.

Dissertation Proposal
Prior to the dissertation proposal defense, students must present their proposal in ERP598. Proposals should be written in a manner consistent with research grants to agencies, but with no page limits. The Office of Sponsored Projects Administration (OSPA) offers useful tips for writing proposals at Microsoft Word - proposal_tips.doc (siu.edu). The student should give a presentation of approximately 3045 minutes plus 45-60 minutes of Q&A in an open forum. If the committee approves the proposal, the student will be ABD (All But Dissertation). If there are revisions to be made to the proposal, the advisor will determine when it is acceptable and then forward the approval paperwork to the office specialist.

Candidacy

When the student has met the residency requirements (24 graduate credit hours), passed the comprehensive examinations and the committee has accepted their dissertation proposal, they will be admitted to candidacy. The Admit to Candidacy form must be completed, signed and sent to the office specialist who will forward it to the graduate school. **The doctoral degree may not be conferred less than six months after admission to candidacy, except upon approval of the dean of the Graduate School.**

Dissertation

Students can write a traditional full-length dissertation, *or* a group of three articles suitable for peer-reviewed academic journals, with an introduction and conclusion. The Committee will determine the nature of those three articles. In addition to Graduate School requirements, one electronic copy of the dissertation must also be sent to the office specialist.

Dissertations must be presented in ERP598 prior to defending the dissertation to the committee. Candidates will be required to present an acceptable dissertation describing original research. The dissertation should be presented to the committee only after it has passed the standards of the advisor as described in the proposal. The committee members should provide feedback to the advisor as to whether the dissertation is ready for defense and if there are any weaknesses that need to be addressed before the defense. The defense is scheduled for approximately 3 hours. They are open to the public and anyone can participate in questioning and discussion subject to reasonable limitations imposed by the chairperson of the committee. Only members of the committee may vote or make recommendations concerning acceptance of the dissertation and final examination. A student will be recommended for the degree only if the members of the committee, with at most one exception, judge both the dissertation and the performance at the oral examination to be satisfactory. In cases where a committee of more than five members has been approved, the requirement of not more than one negative vote will still apply.

STUDENT INFORMATION

SUGGESTED MILESTONES FOR FULL-TIME ERP STUDENTS

1. Students are at liberty to change advisors if required to make progress on their program of study. The advisor will guide the student in the selection of courses, determination of an acceptable dissertation topic, and the selection of other members for the student's committee.
2. By the end of the student's second semester, the student must identify a dissertation topic and select the other members of his/her committee.
3. By the end of the student's third semester, the student must complete, in consultation with their committee, a dissertation proposal
4. By the end of their fourth semester, the student must schedule their comprehensive exams and met with all members of their committee and the course instructors regarding expectations for the exams. Ideally these meetings will take place at the beginning of the student's fourth semester.

ON-LINE REGISTRATION

Prior to registering, students must discuss their classes with their advisor. The advisor must contact the Office specialist and give authorization to release the student's Registration User Number (RUN). After receiving the RUN, students can register on-line. RUNs are given for spring and summer/fall. If there is a registration error for an ERP course, contact the office specialist for an override of the error. If there is a

registration error for a course in another department, fill out a Class Registration Override Permit (Page11), and take it to the instructor for approval and then the department's specialist for processing.

COMPUTER LAB
The ERP Lab is located in Parkinson Lab room 209. ERP students are allowed key access to the building and lab 24 hours a day. Please see the office specialist if you would like keys. There is a wide variety of computer hardware and software available for many aspects of research use. There is also a variety of research equipment that can be checked from the lab, such as GPS systems, digital cameras and laptops. The lab also contains color printers, scanners, a plotter for posters, and projectors for presentations. See the lab manager or go to http://erp.siu.edu/gis-rs-labor/ for more information.

TRAVEL SUPPORT
The Graduate and Professional Student Council (GPSC) gives $150 per fiscal year. They will reimburse $75 each for attending two separate conferences or $150 for presenting at one. For more information, go to the Career Development Reimbursement Form on the GPSC website under Fee Allocation Board or http://gpsc.rso.siu.edu/?page_id=261

The Graduate School will support graduate students ($50 for each) who will go to conferences for research presentations and have also secured other sources of support. If a department or school organizes a research talk or colloquium, which at least ten graduate students will attend and have secured other sources of support, the Graduate School will $100 for such an event. (see http://gradschool.siu.edu/cost-aid/gradstudent-travel-support.php)

ER&P PROGRAM CHECKLIST

Committee Chair
Committee Members
Committee Members

Date   **Requirement**

☐ _____ Core Curriculum Requirement

☐ _____ Concentration Course Requirement
(24 Credit hours)

☐ _____ Faculty Committee Approval Form

☐ _____ Written Exam

☐ _____ Oral Exam

☐ _____ ERP 598 Proposal Presentation

☐ _____ Dissertation Hours Prior to Candidacy
(Only 6 Hours Count Toward Degree)

☐ _____ Proposal Defense (Research Tool)

☐ _____ Admittance to Candidacy

☐ _____ Total Dissertation Hours (24 Required)

☐ _____ Check Dissertation & Graduation Deadlines

☐ _____ Apply for Graduation (The Fee Can Roll
Over One Semester)

☐ _____ ERP 598 Dissertation Presentation

☐ _____ Dissertation Defense

☐ _____ Dissertation Format Check (Can be
Submitted Before Defense)

☐ _____ Dissertation Submission Date

Websites

Graduate Faculty Committee Form   graduate-faculty-committee-approval-form-updated.pdf (siu.edu)

Tips for Writing Proposals   Microsoft Word - proposal_tips.doc (siu.edu)

Proposal Tools and Samples   Resources | Office of Sponsored Projects Administration | SIU

DISSERTATION

ETD Guidelines   guidelines-for-the-preparation-of-dissertations-theses-and-research-papers.pdf (siu.edu)

ProQuest/SIU Submission ProQuest ETD Administrator - Southern Illinois University Carbondale Graduate School

GRADUATION INFORMATION AND APPLICATION

Graduation Information   http://gradschool.siu.edu/current-students/graduation.php

Graduation application   http://gradschool.siu.edu/current-students/graduation-app.php

TRAVEL

GPSC Professional Development Request http://gpsc.rso.siu.edu/?page_id=261

Graduate School   http://gradschool.siu.edu/cost-aid/grad-student-travel-support.php