Brothers, Sheila

From: Schroeder, Margaret <m.mohr@uky.edu>
Sent: Tuesday, April 17, 2018 10:21 AM
To: Brothers, Sheila; McCormick, Katherine
Cc: Price, Steven; Stringer, Jeffrey; Weber, Ann D
Subject: Proposed New PhD in Forest and Natural Resource Sciences
Attachments: PhD Forest and Natural Resource Sciences_Complete_toSAPC.pdf

Proposed New PhD: Forest and Natural Resource Sciences

This is a recommendation that the University Senate approve, for submission to the Board of Trustees, the establishment of a new PhD degree: Forest and Natural Resource Sciences, in the Department of Forestry and Natural Resources within the College of Agriculture, Food and Environment.

Rationale:

The mission of this program, which is in line with the mission of the department, is to prepare students to be well equipped for conducting research in natural resource sciences as well as teaching of natural resources-related disciplines (i.e., forest management, conservation biology, etc.). A doctoral program in Forestry, Natural Resources, and related applied disciplines is not available at any university in the Kentucky system; and, thus, current students pursuing a PhD in this field must leave Kentucky to do so. The proposed doctoral program in FNRS will become the only such program in Kentucky and will enhance Kentucky's academic reputation by attracting high quality, highly motivated students interested in forests and natural resource sciences. The FNRS PhD aims to compete with the best natural resources programs in the nation, and seeks to attract high quality, highly motivated students. The program will offer PhD students an individualized yet comprehensive program in management and conservation of natural resources and the environment. The program intends to create additional graduate opportunities in natural resource sciences for students in Kentucky, and, in turn, enhances current undergraduate and masters programs in UK FNR. Graduates of this program will be employed in academia, state and federal governments and private industry; there is substantial job growth in this area as indicated in the proposal.

They anticipate admitting 2 students each year for the first 4 years, and maintaining that thereafter.

The revised proposal is attached.

Thanks!
Margaret

Margaret J. Mohr-Schroeder, PhD | Associate Professor of STEM Education - Mathematics | SAPC University Senate Committee Chair | University Senator/Senate Council Member | STEM PLUS Program Co-Chair | Department of STEM Education | University of Kentucky | www.margaretmohrschroeder.com | Schedule a Meeting with Me

NEW DOCTORAL DEGREE PROGRAM

1. *This form has three sections. Section A contains information required by the University Senate and Registrar's office. Sections B and C contain information required by two external entities, the CPE (Council on Postsecondary Education) and SACS-COC (Southern Association of Colleges and Schools Commission on Colleges). Section C contains information required only for the Advance Practice Doctorate… Although only Section A is required for University Senate approval, every question must be answered to receive CPE approval. Please write "not applicable" wherever that is the appropriate response, leaving no area blank.*

2. *The CPE requires that a pre-proposal and full proposal be submitted. The pre-proposal is submitted after a proposed program has received college-level approval. Answers to questions identified with an * by the question number on this form should be used for the CPE's pre-proposal. Such questions are in both Section A and Section B. Please email OSPIE@l.uky.edu for more information about the CPE's pre-proposal process. The CPE's full proposal requires completion of both Sections A and B of this form and is submitted after approval by UK's Board of Trustees.*

3. *Once approved at the college level, your college will send the proposal to the appropriate Senate academic council (HCCC and/or GC) for review and approval. Once approved at the academic council level, the academic council will send your proposal to the Senate Council office for additional review via a committee and then to the Senate for approval. Once approved by the Senate, the Senate Council office will send the proposal to the appropriate entities for it to be placed on an agenda for the Board of Trustees. The contact person listed on the form will be informed when the proposal has been sent to committee and other times as appropriate.*

SECTION A – INFORMATION REQUIRED BY UNIVERSITY SENATE					
1. Basic Information: Program Background and Overview					
1a	Date of contact with Institutional Effectiveness[1]:	*10/8/2015*			
	☐ Appended to the end of this form is a PDF of the reply from Institutional Effectiveness.				
1b	Home College: *College Of Agriculture, Food And Environment*				
1c	Home Educational Unit (school, department, college[2]): *Department of Forestry and Natural Resources*				
1d*	Degree Level/Designation (Professional Practice, Research, or Other, e.g. Advance Practice Doctorate): Please make the appropriate selection				
	☐ Professional Practice (e.g. MD, PharmD, or JD)	☒ Research/Scholarship (e.g. PhD)	OR	☐ Other (Advance Practice) (e.g. DNP)	
1e*	Program Name (Biology, Finance, etc.):				
	Doctor of Philosophy; Major: Forest and Natural Resource Sciences				
1g*	CIP Code (provided by Planning and Institutional Effectiveness): *03.0101*				
1h	Is there a specialized accrediting agency related to this program?			Yes ☐	No ☒
	If "Yes," name:				

[1] You can reach Planning and Institutional Effectiveness at OSPIE@l.uky.edu.
[2] Only interdisciplinary graduate degrees may be homed at the college level.

1i	Was this particular program ever previously offered at UK but subsequently suspended?		Yes ☐	No ☒
	If "Yes," describe. (*300 word limit*)			
1j*	Requested UK effective date:	☐ Fall semester following approval	OR	☒ Specific Date[3]: *Fall 20 18*
1k*	Anticipated date for granting first degree(s): *Spring 2022*			
1l*	Proposed Implementation Date (or Anticipated Date of First Student Enrolled in the Program) (*similar to/based on information provided in 12f*))			
	Specific Date[4]:	*Fall 20 18*	OR	*Spring 20 __*
1m*	Contact person name (include position title): *Steven J. Price, Associate Professor and DGS*	Email: *steven.price@uky.edu*		Phone: *7-7610*

2. Program Overview

2a*	Provide a brief description of the proposed program. *(300 word limit,* Pre-proposal question: Mission, 1)
	This program is a multi-year (generally four year) program in Forest and Natural Resource Sciences (FNRS) at the PhD level offered by the Department of Forestry and Natural Resources (UK FNR). The mission of this program is to prepare students to be well equipped for conducting research in natural resource sciences as well as teaching of natural resources-related disciplines (i.e., forest management, conservation biology, etc.). The FNRS PhD will aim to compete with the best natural resources programs in the nation, and will seek to attract high quality, highly motivated students. The program will offer PhD students an individualized yet comprehensive program in management and conservation of natural resources and the environment, which includes substantial scientific investigations in these topics cumulating in a defense of a dissertation and a final examination. The program intends to create additional graduate opportunities in natural resource sciences for students in Kentucky, and enhances current undergraduate and masters programs in UK FNR. This degree is differentiated from the current MS degree in UK FNR by focusing on research, specifically the training of independent research scientists at the PhD level. Graduates of this program will be employed in academia, state and federal governments and private industry. *The program will support the UK FNR tripartite mission:* *1) Conducting research to improve management and conservation,* *2) Teaching the future generation of forest, wildlife, and natural resource managers, and* *3) Outreach to share the findings of relevant research being conducted not only in Kentucky, but from around the country and world.*
2b*	What is the need for the proposed program? For example, is there a shortage of trained professionals or has an accrediting/professional/government body expressed a need for this type of program? Provide justification and evidence to support the need and demand for this proposed program. Include any data on student demand; career opportunities at the regional, state, and national levels; and any changes or trends in the discipline(s) that necessitate a new program. (*300 word limit*)
	A doctoral program in Forestry, Natural Resources, and related applied disciplines is not available at any

[3] Programs are effective the semester following approval. No program will be made effective unless all approvals, up through and including Board of Trustees and CPE approval, are received.

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	university in the Kentucky system; and, thus, current students pursuing a PhD in this field must leave Kentucky to do so. Our proposed doctoral program in FNRS will become the only such program in Kentucky and will enhance Kentucky's academic reputation by attracting high quality, highly motivated students interested in forests and natural resource sciences. Furthermore, there is increasing demand from students for a doctoral program offered by UK FNR. Several faculty are involved in the interdisciplinary Integrated Plant and Soil Sciences PhD program and several serve as co-advisor or have adjunct appointments in other departments (i.e., Biology, Animal Sciences) that grant doctoral degrees. Currently, UK FNR faculty members serve as advisor or co-advisor to nine PhD students; we've seen an increase in the number of UK FNR affiliated PhD students over the last 4 years. Finally, we note increasing demand for jobs in natural resources and similar applied disciplines. We examined U.S. Bureau of Labor Statistics and, at a state level, occupational employment projections provided by Labor Market Information (LMI) and/or individual state Employment Projection office (see www.projectionscentral.com). Examples of the types of jobs available for graduates, average wages for these jobs and antricipated openings for each type of job are presented below. 1. Conservation Scientists and Foresters - $60,360; 7% growth from 2014-2024 2. Postsecondary Forestry and Conservation Science Teachers – $84,810; 9.9% growth from 2014-2024 3. Hydrologists – $78,370; 7% growth from 2014-2024 4. Life Scientists – $70,960; 10.2% growth from 2014-2024 5. Wildlife Biologists $58,270; 4.0% growth from 2014-2024 6. Environmental Scientists $ 66,250; 11% growth from 2014-2024
2c*	List the program objectives. These objectives should deal with how students will benefit from the program, both tangibly and intangibly. Give evidence that they will benefit. (*300 word limit, (similar to 11a))* Pre-proposal question: Mission, 2)
	The objectives of the program include: *1. To respond to the Commonwealth's need for a forest and natural resource-based doctoral program by offering the terminal degree of PhD in Forest and Natural Resource Sciences.* *2. To produce high quality scientists, who will contribute to natural resources disciplines through high impact research, education, and extension. These scientists will provide intellectual and tangible benefits to UK by enriching educational opportunities through interactions with undergraduate and masters students in UK FNR, College of Agriculture, Food and Environment (CAFE), and throughout the broader academic community and lead to increased graduate enrollment in the UK FNR department and CAFE. Benefits to society include enhanced stewardship of Kentucky's natural resources, which are vital for a strong economy in Kentucky.*
2d*	List the student learning outcomes (SLOs) for the proposed program. (*300 word limit)* (*More detailed information will be addressed in Section A, part 5.* Pre-proposal question: Quality, 1)
	The student learning outcomes (SLOs) of the doctoral program in Forest and Natural Resource Sciences include: *•Outcome #1: Students will be able to describe the foundation of critical concepts in natural resource sciences.* *•Outcome #2: Students will be able to find, synthesize, and evaluate conclusions and evidence reported in a variety of sources and place their own academic work into the context of both foundational and contemporary*

	scientific literature. *•Outcome #3: Students will be able to demonstrate the ability to communicate information effectively in oral/visual presentations and in writing.* *•Outcome #4: Students will be able to employ appropriate methods to generate new knowledge as shown through proposal development (i.e., hypothesis generation, novel analytical techniques) and publications based on original research findings.*
2e	Provide the rationale and motivation for the program. Give reference to national context, including equivalents at benchmark institutions. *(150 word limit)*
	A doctoral program in natural resources or related fields (i.e., Forest Ecology, Wildlife Ecology, Conservation Biology) is not offered by universities within Kentucky. With 17 MS students enrolled, UK FNR has one of the highest graduate student enrollments in its history. There is increasing demand from students for a doctoral program offered by UK FNR. Additionally, diverse job opportunities exist for PhD-level scientists trained in natural resources and related fields. *Benchmark Institutions with PhD programs provide a good idea of a range of enrollments for students in Forestry, Natural Resources and related disciplines. We have examined student numbers at various institutions, including:* *•University of Tennessee: 9 currently enrolled in PhD program in Natural Resources (Spring 2018).* *•North Carolina State University: 46 currently enrolled in PhD program (Spring 2018).* *Initially, our proposed program will strive to have a small number of PhD students and be more in line with those from the University of Tennessee.*
2f	Describe the proposed program's uniqueness within UK. *(250 word limit)*
	A doctoral program in natural resources or related fields (i.e., Forest Ecology, Wildlife Ecology, Conservation Biology) is not offered by any departments at UK. The proposed program will provide opportunities for students interested in these types of applied, ecological sciences.
2g	Describe the target audience. *(150 word limit)*
	Primary feeders for this program will be the UK FNRS MS program, and MS and exceptional undergraduate students from across Kentucky who are seeking to remain in-state to complete their PhD in FNRS. Similar to our MS program, we also will recruit both national and international students.
2h*	Does the program allow for any specializations? (Pre-proposal question: Mission, 1) — Yes ☐ — No ☒
2i*	If "Yes," name the specialization(s). *(Specific course requirements will be described in Section A, part 7.)*
	Specialization #1:
	Specialization #2:
	Specialization #3:
2j*	Are necessary resources available for the proposed new program? (*A more detailed answer is requested in Section A, part 4.* Pre-proposal question: Cost, A) — Yes ☒ — No ☐
2k	Describe how the proposed program will be administered, including admissions, student advising, retention, etc. *(150 word limit)*
	The program with be administered by the FNR Director of Graduate of Studies (DGS), the FNR Graduate

	Program Committee, and faculty in the Department of FNR. Admission will be competitive, with the acceptance of the candidate into the program determined by undergraduate and/or graduate grades, GRE scores, and previous research experience, especially peer-reviewed publications, grantsmanship, etc. Baseline requirements include undergraduate or MS GPA of: 3.00 or above and GRE scores of 297 or above (combined verbal reasoning and quantitative reasoning scores). *Students will be advised by their faculty advisors/mentors (i.e., lab PI),graduate committee members and the FNR DGS. Similar to other programs in CAFE (i.e., Animal Science, IPSS) faculty outside of FNR that conduct natural resources research will be able advise or co-advise students in the FNRS program. FNR faculty will request a brief application (i.e. CV, research interests) from outside faculty. Appointment request will be voted upon at FNR faculty meetings.*		
2l	Are multiple units/programs collaborating to offer this program?	Yes ☐	No ☒
	If "Yes," please discuss the resource contribution(s) from each participating unit/program. *(150 word limit)* *(Letters of support will be addressed in Part A, section 7.)*		
2m	Are there any UK programs, which the proposed program could be perceived as replicating?	Yes ☒	No ☐
	If "Yes," give a rationale for why this is not duplication, or is a necessary duplication. *(250 word limit)*		
	A doctoral program in natural resources or related fields is not offered by any departments at UK. However, the Integrated Plant and Soil Science program (administered by the Department of Plant and Soil Sciences) currently has a PhD offering in Forest Science. FNR faculty, especially those with interests in forest ecology, silviculture and hydrology, often support students in this program. Yet, the IPSS Program is not a suitable fit for students and faculty interested in conservation biology, wildlife ecology and other disciplines related to natural resources. The College of Agriculture, Food and Environments' Graduate Cirriculum Committee sought feedback from the IPSS program about the FNR proposed program. Please see letter of support.		
	If "Yes," two pieces of supporting documentation are required. ☒ Check to confirm that appended to the end of this form is a letter of support from the unit chair/director who may perceive this program as a replicate. ☒ Check to confirm that appended to the end of this form is verification that the chair/director of the other unit has agreement from the faculty members of the unit. This typically takes the form of meeting minutes.		
2n	Will the faculty of record for the proposed new Doctoral degree be the graduate faculty of the department/school offering the proposed new degree?	Yes ☒	No ☐
	If "No," please describe the faculty of record for the proposed Doctoral program, including: selection criteria; term of service; and method for adding/removing members. Will the existing director of graduate studies (DGS) in the department/school be the DGS for this proposed Doctoral degree?		
2o	Will the program have an advisory board[5]?	Yes ☐	No ☒
	If "Yes," please describe the standards by which the faculty of record will select members of the advisory board, the duration of service on the board, and criteria for removal. *(150 word limit)*		
	If "Yes," please list below the number of each type of individual (as applicable) who will be involved in the		

[5] An advisory board includes both faculty and non-faculty who are expected to advise the faculty of record on matters related to the program, e.g. national trends and industry expectations of graduates.

	advisory board.	
		Faculty within the college who are within the home educational unit.
		Faculty within the college who are outside the home educational unit.
		Faculty outside the college who are within the University.
		Faculty outside the college and outside the University who are within the United States.
		Faculty outside the college and outside the University who are outside the United States.
		Students who are currently in the program.
		Students who recently graduated from the program.
		Members of industry.
		Community volunteers.
		Other. Please explain:
		Total Number of Advisory Board Members

3. Delivery Mode					**UK DLP and eLearning Office** [6]
3a*	Initially, will any portion of the proposed program's core courses be offered via distance learning[7]? (Pre-proposal question: Quality, 4)				Yes ☐ No ☒
	If "Yes," please indicate below the percentage of core courses that will be offered via distance learning.				
(check one)	1% - 24% ☐	25% - 49% ☐	50% - 74% ☐	75 - 99% ☐	100% ☐
	NOTE: Programs in which 25% or more of the program will be offered via distance learning may need to submit a substantive change prospectus to SACS. Please contact institutionaleffectiveness@uky.edu for assistance. *The prospectus is required by SACS, but it is NOT required for Senate review.*				
3b	If *any* percentage of the program will be offered via the alternative learning formats below, check all that apply, below.				
	☐	Distance learning.			
	☐	Courses that combine various modes of interaction, such as face-to-face, videoconferencing, audio-conferencing, mail, telephone, fax, email, interactive television, or World Wide Web.			
	☐	Technology-enhanced instruction.			
	☐	Evening/weekend/early morning classes.			
	☐	Accelerated courses.			
	☐	Instruction at nontraditional locations, such as employer worksite.			
	☐	Courses with multiple entry, exit, and reentry points.			
	☐	Modularized courses.			
3c	Give pedagogical rationale for the use of alternative delivery modes in the proposed program. Consider the aspects below and elaborate as appropriate. *(200 word limit)* • Synchronous and asynchronous components. • Balance between traditional and non-traditional aspects. • Hybrid elements.				

[6] For questions about alternative delivery modes, please contact UK's Distance Learning Programs and e-Learning office (http://www.uky.edu/DistanceLearning/).

[7] Per the Southern Association of Colleges and Schools Commission on Colleges (SACS) definition of distance education, distance education is a formal educational process in which the majority of the instruction (interaction between students and instructors and among students) in a course occurs when students and instructors are not in the same place. Instruction may be synchronous or asynchronous.

4. UK Resources			
4a*	Will the program's home educational unit require new or additional faculty? (Pre-proposal question: Quality, 6 and Cost, B)	Yes ☐	No ☒
	If "Yes," provide a plan to ensure that appropriate faculty resources are available, either within UK or externally, to support the program. Note whether the new and additional faculty will be part-time or full-time faculty. If "No," explain why. *(150 word limit)*		
	If "Yes," when will the faculty be appointed? *(150 word limit)*		
4b*	Will the program's home educational unit require additional non-faculty resources, e.g. classroom space, lab space, or equipment? (Pre-proposal question: Cost, B)	Yes ☐	No ☒
	If "Yes," provide a brief summary of additional non-faculty resources that will be needed to implement this program over the next five (5) years. If "No," explain why. *(150 word limit)*		
4c	Will the program include courses from another educational unit(s)?	Yes ☒	No ☐
	If "Yes," list the courses and identify the other educational units and subunits that have approved the inclusion of their courses. *(150 word limit)*		
	Coursework will vary depending on students' research areas and deficiencies; although a minimum of 36 credits of graduate-level course work is required to graduate. PhD students will be required to complete specific courses (offered through UK FNR) including FOR 601, FOR 602, FOR 603 (New course in Foundations of Forestry, Wildlife and Natural Resource Sciences; 3 credits) and 3 credits of FOR 770. Similar to our MS FNRS program, the program will be supported by coursework from various departments. The following departments have provided letters of support for sharing coursework: Biosystems and Agricultural Engineering, Biology, Biostatistics, Civil Engineering, Earth and Environmental Sciences,Entomology, Landscape Architecture, Plant and Soil Science, and Statistics.		
	If "Yes," two pieces of supporting documentation are required. ☒ Check to confirm that appended to the end of this form is a letter of support from the other units' chair/director from which individual courses will be used. The letter must include demonstration of true collaboration between multiple units[8] and impact on the course's use on the home educational unit. ☒ Check to confirm that appended to the end of this form is verification that the chair/director of the other unit has consent from the faculty members of the unit. This typically takes the form of meeting minutes.		

[8] Show evidence of detailed collaborative consultation with such units early in the process.

4d	Fill out the faculty roster below for full-time and part-time faculty teaching major core courses in the proposed new Doctoral program. *(similar to question 19)*

NAME List name & identify faculty member as FT (full-time) or PT (part-time).	**FACULTY CIP CODE**[9] List the applicable CIP Code for the faculty member.	**MAJOR CORE COURSES IN THE PROGRAM** List the major core courses in the program that the faculty member will teach and the frequency of the offering (e.g. "every spring")	**OTHER QUALIFICATIONS** *If applicable,* list any other qualifications and comment on how they pertain to the courses in the program the faculty member will teach. *If not applicable*, mark with "n/a."
Arthur, Mary (FT)	*3.0502*	*FOR 770*	
Barton, Chris (FT)	*3.0501*	*FOR 770*	
Contreras, Marco (FT)	*3.0501*	*FOR 770*	
John Cox (FT)	*1.0901*	*FOR 770*	*Dr. Cox's Ph.D. emphasis is in Wildlife Conservation & Biology, and he is a certified Wildlife Biologist by the Wildlife Society.*
Michael Lacki (FT)	*26.0701*	*FOR 770*	
John Lhotka (FT)	*3.0506*	*FOR 770*	
Thomas Ochuodho (FT)	*3.0501*	*FOR 770*	
Steven Price (FT)	*26.0101*	*FOR 601, FOR 603, FOR 770*	*Dr. Price's terminal Biology degree focuses on the ecology and management of reptiles and amphibians in forest environments.*
Matthew Springer (FT)	*01.0000*	*FOR 602, FOR 770*	*Dr. Springer's M.S. is in Wildlife Biology, and his research and Extension programs have focused on management of pest and invasive species in forested areas.*
Jian Yang (FT)	*3.0501*	*FOR 770*	

[9] Consult your college's associate dean for faculty affairs for specific assistance with Classification of Instructional Programs codes (CIP codes).

5. Assessment – Program Assessment and Student Learning Outcomes (SLOs)			
5a	Referring to program objectives, student benefits, and the target audience (questions 2c and 2g), explain how the *program* will be assessed, which is different from assessing student learning outcomes. Include how the faculty of record will determine whether the program is a success or a failure. List the benchmarks, the assessment tools, and the plan of action if the program does not meet its objectives. *(250 word limit)*		
	The objectives of the program include:1. To respond to the Commonwealth's need for a natural resources doctoral program by offering the terminal degree of PhD in Forest and Natural Resource Sciences, and 2. To produce high quality scientists, who will contribute to natural resources disciplines through high impact research, education, and extension. *Assessment of these objectives are fairly straightforward. First, the UK FNR DGS, academic staff and and faculty will monitor student inquiries, applications and acceptances to determine if recrutiment efforts are attracting high-quailty students, both from within and outside Kentucky. Although our benchmark for student numbers (i.e. 2 students during year 1, See 12f) provides a small sample size, these data will allow UK FNR to measure if student's show a strong interest in our program. If we have minimal interest, FNR faculty will develop focused recruitment efforts plans that may include broadly advertising on listserves, within relevant publications and at regional and national meetings.* *Several metrics will be used to assess objective #2, including degrees awarded, time to degree completion, employment success(including post-doctoral positions) and publications, presentations or other recognitions of success. We will also record teaching, service, extension-related activities. UK FNR has an active department advisory board, which meets periodically to offer external perceptions of program success. The perceptions will include the competencies of our graduates.*		
5b	Based on the SLOs from question 2c, append a PDF of the program's curriculum map[10] to the end of this form. *(related to 2d and 14d)*		
5c	Append an assessment plan[11] for the SLOs to the end of this form.		
6. Non-Course Requirements			
6a	Will the program require completion of a master's degree from a fully accredited institution of higher learning?	Yes ☐	No ☒
	If "No," explain below. (*150 word limit*)		
	Advanced undergraduate students, (i.e., those with extensive research experience) will also be encouraged to apply to the program.		
6b	The Graduate School requires applicants to have an overall GPA of 2.75 on undergraduate work. Will the program have a higher undergraduate GPA requirement?	Yes ☒	No ☐
	If "Yes," describe below. (*150 word limit*)		

[10] Course mapping (or "curricular mapping") is a representation of how faculty intend to approach and assess each of the student learning outcomes identified for the courses for the degree program, with an emphasis on only those courses required for all degree candidates. It is a master chart that indicates which objectives are being met, to what extent, and how often. This identifies whether an objective is "introduced," "developed," and/or "mastered" within a given course; it may be helpful also to chart any classroom-based assessment measures used to demonstrate that claim.

[11] An assessment plan is typically a tabular grid that illustrates the artifacts, rubrics, assessment team, and periods of assessment for the SLOs.

	Baseline requirements include undergraduate or MS GPA of 3.00 or above and GRE scores of 297 or above (combined verbal reasoning and quantitative reasoning scores). Undergraduate or MS degree in Natural Resources, Forestry, Wildlife Management or a related discipline is recommended.		
6c	Will the proposed program include requirements for testing (e.g. GRE, GMAT, TOEFL) to be considered for admission?	Yes ☒	No ☐
	If "Yes," name each test and describe the specific requirements, scores, etc. below. (*150 word limit*)		
	Baseline requirements include GRE scores of 297 or above (combined verbal reasoning and quantitative reasoning scores).		
6d	Will the program have a world language requirement?	Yes ☒	No ☐
	If "Yes," describe below. (*150 word limit*)		
	Applicants whose native language is not English must have a Test of English as a Foreign Language (TOEFL) with a minimum score of 79 on the TOEFL-iBT or a minimum score of 6.5 on the International English Language Testing System (IELTS).		
6e	The Graduate School allows transfer of up to nine credits or 25% of course work. Please describe transfer credit limitations below for the proposed program. (*150 word limit*)		
	Students may transfer from natural and/or applied science programs, agricultural programs or social science programs. Guidelines from the Graduate School require a GPA of 3.00 for transferring graduate students. All transfer students will be handled by an admissions committee made up of UK FNR faculty members. We will allow students to transfer up to nine credits or 25% of course work.		
6f	Will the program have a research proposal requirement (Plan A)?	Yes ☒	No ☐
	(If "Yes," explain the requirements below. If "No," proceed to question 6g.)		
	PhD students will be required to complete a research proposal. Students will take Research Methods in Forestry (FOR 601) during their first year in the program. Students in FOR 601 are required to: 1) complete a research proposal based on their thesis/disseration topic and 2) present their proposal at a FNR department seminar. In addition, students are required to distribute their research proposals to their advisor(s) and advisory committee for comments and suggestions during the draft stage. Research proposal completed in FOR 601 serves an the initial draft (or component) of the full proposal required for the qualifying exam.		
6g	Provide the final examination criteria.	Yes ☒	No ☐
	All PhD students must pass a qualifying examination (proposed at end of second year) and a final examination and dissertation defense (proposed at end of fourth year). Students will provide their advisory committee a written disseration proposal prior to the qualifying exam, and provide an oral presentation and undergo an oral examination administered by their committee. All four student learning outcomes will be evaluated during the examination. For the final examination, students will provide their committee with a complete disseration and give an oral presentation and undergo oral examination. All four student learning outcomes, for late career students, will be evaluated by advisory committee during the final exam.		
6h	Describe termination criteria.	Yes ☒	No ☐
	Students will have two opportunities to complete their qualifying examination. If they fail to obtain a		

	satisfactory score on their qualifying exam and assessment(as determined by their committee), students will be terminated from the program.

7. Course Requirements.

7a	Document the total credit hours required by level below. At least two-thirds of the minimum requirements for the Doctoral or specialist degree must be in regular courses, and at least half of the minimum course requirements (excluding thesis, practicum, or internship credit) must be in 600- or 700-level courses.			
	400G-level:	500-level:	600-level: *9*	700-level: *3*

7b	What is the total number of credit hours required for the degree? (e.g. 24, 32)	*36*
	If an explanation about the total credit hours is necessary, use the space below. *(150 word limit)*	
	•At least 36 graduate credits *•At least 24 graduate credits must be in "regular" courses. "Regular" courses are defined to be those that meet in a classroom at regularly-scheduled times each week. FOR 599, 748, 768, 781, 791 do not count as "regular" courses, except FOR 599 does count if it has a subtitle and regular weekly classroom meeting pattern.* *•At least 18 graduate credits must be in 600- or 700-level courses. Thesis, practicum, and internship credits (e.g., FOR 768) do not count toward this requirement. FOR 781 and FOR 791 do count toward these credits.* *•At least 18 graduate credits must be in the major area (i.e. courses with the FOR prefix) with at least 12 graduate credits at 600- or 700-level.* *•FOR 599, 781, and 791 credits must not exceed allowable semester or lifetime totals for PhD students* *•A MS degree may satisfy up to 18 of the 36 required credits (as determined by student's advisory committee)*	

Use the grids below to list core courses, electives, courses for a concentration, etc.
Use the course title from the Bulletin or from the most recent new/change course form.

7c **Degree/Program Major Core Courses.** These courses are required for all students in the program and include prerequisite courses. Check the appropriate box to describe the course as either "program core" or "prerequisite."

Prefix & Number	Course Title	Type of Course	Credit Hrs	Course Status[12]
FOR 601	*Research Methods in Forestry*	☒ Pgm Core ☐ Prerequisite	*3*	No Change
FOR 602	*Renewable Natural Resources in a Global Perspective*	☒ Pgm Core ☐ Prerequisite	*3*	No Change
FOR 603	*Foundations in Forestry, Wildlife and Natural Resource Sciences*	☒ Pgm Core ☐ Prerequisite	*3*	New
FOR 770	*Seminar (1 credit each, three required)*	☒ Pgm Core ☐ Prerequisite	*3*	No Change
		☐ Pgm Core ☐ Prerequisite		Select one....
		☐ Pgm Core ☐ Prerequisite		Select one....
		☐ Pgm Core		Select one....

[12] Use the drop-down list to indicate if the course is a new course ("new"), an existing course that will change ("change"), or if the course is an existing course that will not change ("no change").

		☐ Prerequisite		
		☐ Pgm Core ☐ Prerequisite		Select one....
		☐ Pgm Core ☐ Prerequisite		Select one....
		☐ Pgm Core ☐ Prerequisite		Select one....
		☐ Pgm Core ☐ Prerequisite		Select one....
		☐ Pgm Core ☐ Prerequisite		Select one....
		☐ Pgm Core ☐ Prerequisite		Select one....
		☐ Pgm Core ☐ Prerequisite		Select one....
		☐ Pgm Core ☐ Prerequisite		Select one....
		*Total **Core Courses** Credit Hours:*		

7d	Is there any narrative about prerequisite courses for the program that should be included in the Bulletin?	Yes ☐	No ☒
	If "Yes," note below. (*150 word limit*)		
7e	Is there any narrative about core courses for the program that should be included in the Bulletin?	Yes ☒	No ☐
	If "Yes," note below.		
	Prereq:Graduate standing. Note these narratives are currently listed in the Bulletin except for FOR 603		
	Program Guided Electives[13] (Guided electives for <u>all</u> students in the program.)		
7f	Does the program include any guided electives?	Yes ☐	No ☒
	(If "Yes," indicate and note the specific courses in the grid below (7g). If "No," indicate and proceed to question 7i.)		

[13] Guided electives are available to all students in the program and are organized as groups of elective courses, from which a student chooses one (or two, or three, etc.).

7g	Using the grid provided, list the guided electives below.			
Prefix & Number	Course Title		Credit Hrs	Course Status[14]
				Select one....
				Select one....
				Select one....
				Select one....
				Select one....
				Select one....
				Select one....
				Select one....
				Select one....
				Select one....
		Total Credit Hours as Guided Electives:		

7h	Is there any narrative about guided electives courses that should be included in the Bulletin?	Yes ☐	No ☒
	If "Yes," note below. (*150 word limit*)		

	Program Free Electives[15]. (Free electives for all students in the program.)		
7i	Does the program include any free electives?	Yes ☒	No ☐
	(If "Yes," indicate and proceed to question 7j. If "No," indicate and proceed to 7l.)		

7j	What is the total number of credit hours in free electives?	*24*

7k	Provide the free electives courses language that will be included in the Graduate School Bulletin. (*150 word limit*)
	•Students must take 24 credits of free electives. Normally, this includes 5XX, 6XX, 7XX courses and 4XXG counts only if prefix is other than FOR. In addition: *•At least 12 credits must be in "regular" courses and at least 6 of the 12 credits must be at 600 or 700 level. See 7b for specific information.* *•FOR 599, 781, and 791 credits (and combinations thereof) must not exceed allowable semester or lifetime totals for PhD students* *•A MS degree may satisfy up to 18 of the 36 required credits (as determined by student's advisory committee) .*

	Courses for a program's specialization(s).
	Click HERE for a template for additional specializations[16].

[14] Use the drop-down list to indicate if the course is a new course ("new"), an existing course that will change ("change"), or if the course is an existing course that will not change ("no change").

[15] Program free electives are available to all students in the program (regardless of any concentration(s)) and the choice of which course(s) to take is up to the student. Courses are not grouped but can be described as "student must take three courses at the 600-level or above."

[16] Append a PDF with each concentration's courses to the end of this form.

7l	Does the program include any specializations?	Yes ☐	No ☒
	(If "Yes," indicate and proceed to question 7m. If "No," indicate and proceed to 7p.)		

7m	Specialization name:

Prefix & Number	Course Title (Check the appropriate box to describe the course as "a core course for the concentration" or "an elective course for the specialization.")		Credit Hrs	Course Status[17]
		☐ Core ☐ Elective		Select one....
		☐ Core ☐ Elective		Select one....
		☐ Core ☐ Elective		Select one....
		☐ Core ☐ Elective		Select one....
		☐ Core ☐ Elective		Select one....
		☐ Core ☐ Elective		Select one....
		☐ Core ☐ Elective		Select one....
		☐ Core ☐ Elective		Select one....
		☐ Core ☐ Elective		Select one....
		☐ Core ☐ Elective		Select one....

7n	Provide specialization-related language that should be included in the Graduate School Bulletin. (*150 word limit*)

7o	Does the program have an additional specialization?	Yes ☐	No ☒
	(If "Yes," indicate and proceed to question 7p. If "No," indicate and proceed to 7r.)		

7p	Specialization #2 Name:	

Prefix & Number	Course Title (Check the appropriate box to describe the course as "a core course for the specialization" or "an elective course for the specialization.")		Credit Hrs	Course Status[18]
		☐ Core		Select one....

[17] Use the drop-down list to indicate if the course is a new course ("new"), an existing course that will change ("change"), or if the course is an existing course that will not change ("no change").

[18] Use the drop-down list to indicate if the course is a new course ("new"), an existing course that will change ("change"), or if the course is an existing course that will not change ("no change").

		☐ Elective		
		☐ Core ☐ Elective		Select one....
		☐ Core ☐ Elective		Select one....
		☐ Core ☐ Elective		Select one....
		☐ Core ☐ Elective		Select one....
		☐ Core ☐ Elective		Select one....
		☐ Core ☐ Elective		Select one....
		☐ Core ☐ Elective		Select one....
		☐ Core ☐ Elective		Select one....
		Total Credit Hours, Concentration #2:		

7q	Provide specialization-related language that should be included in the Graduate School Bulletin for the second specialization. (*150 word limit*)
7r	Is there anything else about the proposed program that should be mentioned? *(150 word limit)*

8. Degree Plan

8a	Create a degree plan for the proposed program by listing in the table below the courses that a typical student would take each semester. Use the spaces for "Year 3" and beyond only if necessary. If multiple concentrations are available, click HERE for a template for additional concentrations. Append a PDF with each concentration's semester-by-semester program of study to the end of this form.			
	YEAR 1 - FALL:	*FOR 601 (3 credits)* *FOR 602 (3 credits)* *FOR 770 (1 credit)* *FREE ELECTIVE (3 credits)*	**YEAR 1 - SPRING:**	*FOR 770 (1 credit)* *FREE ELECTIVE (3 credits)* *FREE ELECTIVE (3 credits)* *FREE ELECTIVE (3 credits)*
	YEAR 2 - FALL :	*FOR 603 (3 credits)* *FOR 770 (1 credit)* *FREE ELECTIVE (3 credits)* *FREE ELECTIVE (3 credits)*	**YEAR 2 - SPRING:**	*FREE ELECTIVE (3 credits)* *FREE ELECTIVE (3 credits)* *FREE ELECTIVE/FOR 768 (4 credits)*
	YEAR 3 - FALL:	*Qualifying Exam* *FOR 748 (residency; 0 credit)*	**YEAR 3 - SPRING:**	*FOR 748 (residency; 0 credit)*
	YEAR 4 - FALL:	*FOR 748 (residency; 0 credit)*	**YEAR 4 - SPRING:**	*FOR 748 (residency; 0 credit)* *Dissertation Defense and Final Exam*
	YEAR 5 - FALL:		**YEAR 5 - SPRING:**	

8b	With reference to the degree plan above, explain how there is progression in rigor and complexity in the courses that make up the program. *(150 word limit)*
	Students will begin the degree program as a doctoral student by planning their disseration project in FOR 601 during their first semester. Specifically, students will prepare a proposal and present their research projects to the FNR faculty the semester that follows their enrollment in FOR 601. Core degree requirements and all free electives will be completed during their first four semesters. Between the 4th and 5th semesters, students will take their qualifying exam' requirements for this exam will include a full research proposal, an oral presentation (based on the proposal), and an oral examination. All four student learning outcomes will be assessed by the student's advisory committee directly after the qualifying exam. Passing this exam will change student status to doctoral canditate. Once a student has completed their written dissertation, students will defend their disseration and undergo final examination by the end of their 8th semester. Specific requirements fo r the defense will include a written dissertation, and oral presentation and an oral examination. All four student learning outcomes will be assessed by the student's advisory committee directly after the final exam.

9. Approvals/Reviews				
Information below does not supersede the requirement for individual letters of support from educational unit administrators and verification of faculty support (typically takes the form of meeting minutes).				
	Reviewing Group Name	**Date Approved**	**Contact Person Name/Phone/Email**	
9a	(Within College/Home Unit) *In addition to the information below, attach documentation of department and college/home unit approval. This typically takes the form of meeting minutes but may also be an email from the unit head reporting department- and college-level votes.*			
	CAFE	*FNR*	*10 / 7 / 2015*	
	CAFE	*GCC*	*02 / 03 / 2017*	
	Graduate School	*Grad. Council*	*05 / 11 / 2017*	
			/ /	
9b	(Collaborating and/or Affected Units)			
			/ /	
			/ /	
			/ /	
			/ /	
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			/ /	
9c	(Senate Academic Council)		**Date Approved**	**Contact Person Name**
	Health Care Colleges Council (if applicable)			
	Graduate Council			

SECTION B – INFORMATION REQUIRED BY CPE AND SACS	
10. Mission: Centrality to the Institution's Mission and Consistency with State's Goals	
10a	List the objectives of the proposed program. These objectives should deal with the specific institutional and societal needs that this program will address. (Pre-proposal question: Mission, 2)
	The objectives of the program include: *1. To respond to the Commonwealth's need for a natural resources doctoral program by offering the terminal degree of PhD in Forest and Natural Resource Sciences (FNRS). Currently, a doctoral program in natural resources or related disciplines (i.e., Conservation Biology, Forest Science, Wildlife Ecology, Ecosystem Management, etc.) is not available at any university in Kentucky.* *2. To produce high quality scientists, who will contribute to natural resources disciplines through high impact research, education, and extension. These scientists will provide intellectual and tangible benefits to UK by enriching educational opportunities through interactions with undergraduate and masters students in UK Forestry and Natural Resources (FNR), College of Agriculture, Food and Environment (CAFE), and throughout the broader academic community at UK and lead to increased graduate enrollment in the UK FNR department and CAFE. Benefits to society include enhanced stewardship of Kentucky's natural resources, which are vital for a strong economy in KY.*
10b*	*Explain how the proposed program relates to the UK institutional mission and academic strategic plan.* (Pre-proposal question: Mission, 3)
	UK Mission Plan - The University of Kentucky is a public, land grant university dedicated to improving people's lives through excellence in education, research and creative work, service, and health care. *Goal 1. Prepare students for leading roles in innovation-driven economy and global society* *Goal 2. Promote research and creative work to increase the intellectual, social, and economic capital of Kentucky and the world beyond its borders.* *Goal 3. Develop the human and physical resources of the University to achieve the Institution's Top 20 Goals.* *Goal 4. Promote diversity and inclusion.* *The objectives of this program reflect the mission and goals of the University of Kentucky by preparing students for professions in natural resource sciences to serve the needs of the Commonwealth and beyond.*
10c*	Explain how the proposed program addresses the state's postsecondary education strategic agenda. (Pre-proposal question: Mission, 3)
	This program will support Kentucky's postsecondary education agenda to increase education attainment and quality of life by raising the education attainment level of the Commonwealth specifically, and the national community, generally. The mission of this program is to prepare students to be well equipped for conducting high-impact research in the field of natural resource sciences as well as for the teaching of natural resources-related disciplines in an academic setting. The research and teaching of FNRS graduates and students will lead to broad national and international impacts and collaborations.
10d*	Explain how the proposed program furthers the statewide implementation plan. (Pre-proposal question: Mission, 3)
	The proposed program will enhance Kentucky's academic reputation by attracting high quality, highly motivated students. Currently, a doctoral program in natural resources and related disciplines is not available at any university in Kentucky, and thus all students pursuing a PhD in this field leave Kentucky to do so. Graduates will be leaders and innovators in the field, employed in academia, state and federal government, and private sectors. The program will requires minimal funding to implement as all necessary components are currently in place for the existing MS program. Specifically, funding for the program will come from extramural grant awards to participating faculty and other departmental funds. The program will be accountable for producing high-quality graduates competitive for faculty teaching and research positions. We will annually assess students' progress toward performance metrics and targets and report these as we currently do for the BS and MS programs. The department annually prepares an Implementation Plan reporting

	on progress toward identified objectives; the PhD program will become a part of that reporting. UK Forestry faculty members currently advise nine PhD students through other departments on campus; we believe this to be a sustainable number balancing quality and quantity. In fact, 9-12 students would be a suitable target enrollment for the new PhD program for the first five years. We will continue to explore partnerships, collaborations, and extramural funding to create additional incentives for students to pursue a PhD in the FNR Department.		
10e*	Is an approval letter from an Educational Professional Standards Board (EPSB) required? (i.e. any program leading to teacher, principal, or superintendent certification, rank change, etc.) (Pre-proposal question: Mission, 4)	Yes ☐	No ☒
	If "Yes," please append a PDF version of the letter to this form.		
11. Quality: Program Quality and Student Success			
11a*	List all student learning outcomes of the program. (Pre-proposal question: Quality, 1)		
	The student learning outcomes (SLOs) of the doctoral program in FNRS include: *•Outcome #1: Students will be able to describe the foundation of critical concepts in natural resource sciences.* *•Outcome #2: Students will be able to find, synthesize, and evaluate conclusions and evidence reported in a variety of sources and place their own academic work into the context of both foundational and contemporary scientific literature.* *•Outcome #3: Students will be able to demonstrate the ability to communicate information effectively in oral/visual presentations and in writing.* *•Outcome #4: Students will be able to employ appropriate methods to generate new knowledge as shown through proposal development (i.e., hypothesis generation, novel analytical techniques) and publications based on original research findings.*		
11b	Explain how the curriculum achieves the program-level student learning outcomes by describing the relationship between the overall curriculum or the major curricular components and the program objectives.		
	Students are required to complete FOR 601, FOR 602, FOR 603 and 3 credits of FOR 770 (See 18a for course descriptions). *Outcomes 1,2,3,and 4 will be introduced and reinforced in FOR 601 through the development a research proposal based on orginal hypotheses and oral presentation of proposed research given to their peers, advisory committee and FNRS faculty. FOR 602, FOR 603 and 770 seminars will reinforce and emphasize all outcomes through the requirement of research papers and presentations.* *Early career assessment will occur during the qualifying exam stage, and based on the student'sdetailed dissertation proposal, presentation and oral examination. The student's advisory committee will administer the assessment.Late career assessment will occur during exit seminar, final exam and through evaluation of completed disseration. The student's advisory committee will administer the assessment.*		
11c*	Highlight any distinctive qualities of this proposed program. (Pre-proposal question: Demand, 2)		
	A doctoral program in natural resources, forestry or related fields is not offered by Kentucky universities, thus we are providing a new program to the Commonwealth. Our emphasis on research and academic pursuits is not distinctive, however our core class requirements, exam schedule and required credits (36) highlight the rigor associated with this proposed program.		
11d*	Will this program replace any existing program(s) or specializations within an existing program? (Pre-proposal question: Quality, 3)		
	No, the program will not replace any existing programs or specializations within an existing program.		
11e*	Please specify. (Pre-proposal question: Quality, 3)		
11f	Include the projected faculty/student in major ratio.		

	UK FNR currently has 13 faculty members, including five full professors, four associate professors, and four assistant professors. UK FNR has added to its research capacity significantly in recent years through 8 adjunct appointments. These adjunct faculty members are affiliated with US Forest Service, Kentucky Division of Fish and Wildlife Resources and other institutions. UK FNR faculty currently advise or co-advise nine PhD students, thus the current student: faculty ratio is close to 1:1 and we expect to maintain this ratio going forward.		
11g	Is there a specialized accrediting agency related to this program?	Yes ☐	No ☒
11h	Please identify the agency.		
11i	Do you plan to seek accreditation?	Yes ☐	No ☒
11j	Please explain your plans for accreditation.		
11k	Attach SACS Faculty Roster Form.		
11l*	Resources (Pre-proposal question: Quality, 2)		
11l.i	A. Describe the library resources available to support this program. You may attach any documentation provided to SACS.		
	The UK Libraries offers collections, services and other learning/information resources consistent with the degrees offered at the University. UK Libraries fulfill the University's educational, research, and service missions through the acquisition, organization, and preservation of relevant information resources that support the academic and research programs. The print collections are housed in the ten libraries across the campus and in the print archives. UK Libraries' resources include: *• 4 million volumes* *• access to 100,000 current serials, including 70,000 electronic serials accessible on and off campus* *• access to approximately 450 licensed networked electronic resources/databases* *• 550,000 electronic books accessible on and off campus* *• 100,000 audio/visual materials* *Plus full wireless capability in all campus libraries provides access to electronic resources within library facilities.*		
11l.ii	B. Describe the physical facilities and instructional equipment available to support this program. Physical facilities and instructional equipment must be adequate to support a high quality program. The proposal must address the availability of classroom, laboratory, and office space as well as any equipment needs.		
	The UK FNR Department is located in the Thomas Poe Cooper and Dimock Buildings. These historic buildings contain research laboratories, several large, newly renovated teaching classrooms, and office space. All laboratories and offices are equipped with networked computer stations and each graduate student in the FNRS Department has their own desktop computer and office space. Most professors have their own research lab space; major equipment includes: a fully functional water quality laboratory (an atomic absorption spectrophotometer, ion chromatograph, TOC analyzer, two auto analyzers, an auto-titrating alkalinity meter, and pH, conductivity and turbidity meters), wiley mill, ball mill, drying ovens, scales, refrigerators, freeze drier, dissecting microscopes, and additional equipment. In addition to the equipment available at the Thomas Poe Cooper and Dimock Buildings, faculty and students also use the Environmental Research Training Laboratory if their specific project requires conventional or real-time PCRs, chromatographs, and other equipment. Field equipment includes pH meters, YSI meters, GPS units, hyposometers, variety of plant censusing and forestry equipment, Petterson and Anabat bat detectors, radio telemetry equipment, insect sampling equipment (Malaise, pitfall and blacklight traps, aquatic samplers, aerial samplers), mist nets, harp traps, aquatic sampling nets, electronic compasses, laser rangefinder, PIT tags and readers, data logging receivers, soil moisture monitoring equipment, etc. UK FNR also maintains a laboratory in the newer Plant and Soil Sciences building. This laboratory is used primarily for genetics and plant pathology research and houses three faculty members and several postdoctoral scholars. In addition, UK FNR manages a 10,000-acre		

	research forest in Knott, Breathitt, and Perry Counties in eastern Kentucky. Many faculty from UK FNR, as well as faculty from around the university and region, conduct research within this exceptional natural teaching, research, and demonstration laboratory.
11m	Clearly state the admission, and retention, and completion standards designed to encourage high quality.
	Admission will be competitive with the acceptance of the candidate into the program determined by grades, GRE scores, and previous research experience, especially peer-reviewed publications, grantsmanship, etc. Baseline requirements include undergraduate or MS GPA of: 3.00 or above, GRE scores of 297 or above (combined verbal reasoning and quantitative reasoning scores). Undergraduate or MS degree in Natural Resources, Forestry, Wildlife Management or related discipline is recommended. International applicants interested in the program will be encouraged to apply and will be handled on a case-by-case basis with advice from the Office of International Affairs. Applicants whose native language is not English must have a Test of English as a Foreign Language (TOEFL) with a minimum score of 79 on the TOEFL-iBT or a minimum score of 6.5 on the International English Language Testing System (IELTS). All admissions will be handled by an admissions committee made up of UK FNR faculty members.Students will be required to pass a qualifying exam at the end of their second year. Students must pass the exam on either their first or second attempt; students will not be retained if they are unable to pass the exam. A final exam, accompied by a disseration defense, will also be required.
11n	Clearly state the degree completion requirements for the program.

Name	**Total number of hours required for degree**	**Number of hours in degree program core**	**Number of hours in guided electives**	**Number of hours in free electives**
Program				

11o	Describe how the proposed program will articulate with related programs in the state. It should describe the extent to which student transfer has been explored and coordinated with other institutions. Attach all draft articulation agreements related to this proposed program.
	A doctoral program in forest and natural resources or related disciplines is not available at any university in Kentucky. However, students may transfer from natural and/or applied science programs, agricultural programs or social science programs. Guidelines from the Graduate School require a GPA of 3.00 for transferring graduate students. All transfer students will be handled by an admissions committee made up of UK FNR faculty.
11p	List courses under the appropriate curricular headings. (*refer to question 18 for template*)
	• *FOR 601 Research Methods in Forestry (3)* • *FOR 602 Renewable Natural Resources in a Global Perspective (3)* • *FOR 603 Foundations in Forestry, Wildlife and Natural Resource Sciences (3)* • *FOR 770 Forestry Seminar (1-credit seminar on various topics) (3 credits are required)*
11q*	Will this program utilize alternative learning formats (e.g. distance learning, technology-enhanced instruction, evening/weekend classes, and accelerated courses)? (Pre-proposal question: Quality, 4)
	No

12. Demand: Program Demand/Unnecessary Duplication

Student Demand:

12a*	Provide justification and evidence to support the need and demand for this proposed program. Include any data on student demand; career opportunities at the regional, state, and national levels; and any changes or trends in the discipline(s) that necessitate a new program. For example, is there a shortage of trained professionals or has an accrediting/professional/government body expressed a need for this type of program? (Pre-proposal question: Demand, 1; *same as question 2b*)
	A doctoral program in natural resources or related fields (i.e., Forest and Wildlife Ecology, Conservation

	Biology) is not offered by universities within Kentucky. Our proposed doctoral program in Forest and Natural Resource Sciences will become the only such program in Kentucky. The development of this proposal was supported by all UK FNR faculty members, and the UK Forestry Research Committee has aided in the development of this proposal. *With 17 MS students enrolled, UK FNR Department has one of the highest graduate student enrollments in its history. There is increasing demand from students for a doctoral program offered by UK FNR. Though UK FNR does not have PhD program, several faculty are involved in the interdisciplinary Integrated Plant and Soil Sciences PhD program and several serve as co-advisor or have adjunct appointments in other departments (Biology, Plant and Soil Sciences, Animal and Food Sciences) that grant doctoral degrees. Currently, UK Forestry faculty members serve as advisor or co-advisor to nine PhD students; we've seen an increase in the number of UK FNR affiliated PhD students over the last 4 years. Based on these data, we expect to enroll a class of 3 students during the first year of the program.* *Benchmark Institutions with PhD programs provide a good idea of a range of enrollments for students in Forestry, Natural Resources and related disciplines including:* *•University of Tennessee: 9 PhD students currently enrolled in Natural Resources PhD program.* *•North Carolina State University: 46 students currently enrolled in PhD programs (including Functional Genomic-Forestry, Forestry and Environmental Resources and Fisheries, Wildlife and Conservation Biology* *Initially, our proposed program will strive to have numbers more in line with those from the University of Tennessee.*
12b	Identify the applicant pool and how they will be reached.
	Initially, our efforts will focus on reaching out to regional institutions, where doctoral programs in Natural Resources do not exist. This includes all universities within Kentucky, such as Murray State University, Eastern Kentucky University and Western Kentucky University. UK FNR will send promotional materials for distribution, and our faculty will visit and communicate directly with faculty at these regional universities. As this program develops, we expect to recruit students from across the nation and compete with the top graduate programs in natural resource sciences in the US.
12c	Describe the student recruitment and selection process.
	UK FNR faculty members have a substantial network of connections both across the US and internationally. In fact, several of our current MS students are international students or originate from undergraduate students outside the Southeast and Midwest US. Several faculty members conduct research (e.g., Dr. Contreras, Chile; Dr. Cox, Kenya; Dr. Yang, China) and teach (e.g., Dr. Price, Costa Rica) internationally as well. We will use this network to promote the new PhD program. In addition, we will use professional journals, newsletter and listservs, such as the Texas A & M Department of Wildlife and Fisheries Sciences Job Board and the Ecological Society of America EcoLog Listserve, to advertise the program.
12d	Identify the primary feeders for the program.
	Primary feeders for this program will be the UK FNRS MS program, and MS and exceptional undergraduate students from across Kentucky who are seeking to remain in-state to complete their PhD in Forest and Natural Resource Sciences. As mentioned above, we will also recruit students from across the nation, and compete with the top natural resources graduate programs in the US.
12e	Provide any evidence of a projected net increase in total student enrollments to the campus as a result of the proposed program.
	There are currently 17 UK FNRS MS students. Nine PhD students are advised by UK FNR faculty but enrolled in other departments. We expect to enroll a class of 2 students during the first year of the program. We expect 1 of these students will come from our MS program. As the program builds, we expect this number to increase, along with the number of candidates we are able to admit. However, our current data suggest that 10-12 students can be sustained with our current faculty and research funding.

12f Project estimated student demand for the first five years of the program.

Academic Year	Degrees Conferred	Majors (Headcount) - Fall Semester
2016-2017		
2017-2018		
2018-2019		
2019-2020		
2020-2021		

12g Employer Demand:

Describe the types of jobs available for graduates, average wages for these jobs, and the number of anticipated openings for each type of jobs at the regional, state, and national levels.

We examined U.S. Bureau of Labor Statistics and, at a state level, occupational employment projections provided by Labor Market Information (LMI) and/or individual state Employment Projection office (see www.projectionscentral.com). Occupational employment projections are developed for all states by Labor Market Information (LMI) or individual State Employment Projections offices. We also examined online job boards, including the Texas A & M Department of Wildlife and Fisheries Sciences Job Board and the Society for Conservation Biology Job Board. We provide types of jobs available, median pay, and projected growth below.

Conservation Scientists and Foresters - $60,360; 7% growth from 2014-2024
2. Postsecondary Forestry and Conservation Science Teachers – $84,810; 9.9% growth from 2014-2024
3. Hydrologists – $78,370; 7% growth from 2014-2024
4. Life Scientists – $70,960; 10.2% growth from 2014-2024
5. Natural Science Managers – $120,050; 3% growth from 2014-2024
6. Zoologists and Wildlife Biologists $58,270; 4.0% growth from 2014-2024
7. Environmental Scientists and Specialists $66,250; 11% growth from 2014-2024

We also note that 19 Assistant Professor jobs in Natural Resources and related fields were posted in January 2016.

12h Similar programs:

Are there similar programs in other Southern Regional Education Board (SREB) states and in the nation? Yes ☒ No ☐

If "Yes," please identify similar programs in other SREB states and in the nation.

Auburn University – Forestry
Louisiana State University – Renewable Natural Resources
Mississippi State University – Forest Resources
North Carolina State University – Forestry and Environmental Resources
University of Florida – Forest Resources and Conservation
University of Georgia – Forestry and Natural Resources
University of Tennessee – Natural Resources

12i* Academic Disciplinary Needs:

Is the proposed program an advance practice doctorate? (Pre-proposal question: Advanced Practice Doctorate, 1) Yes ☐ No ☒

If "Yes," please, explain the new practice or licensure requirements in the profession and/or requirements by specialized accrediting agencies that necessitate a new doctoral program.

If "Yes," completion of Section C (Advance Practice Doctorate) is required.

Please note: Section 13 has been replaced with Section C (at the end of the document).

14. Assessment and Oversight

14a*	Describe how each program-level student learning outcome will be assessed and how assessment results will be used to improve the program. ***(Pre-proposal question: Assess, 1)***
	UK FNR conducts one of the most intensive student learning outcomes assessment of any program on campus. Dr. Laura Lhotka currently manages our assessment program which is designed not only to meet university reporting requirements, but also assist UK FNR in understanding how well our students are learning course material. The student learning objectives include: 1. Students will be able to describe the foundation of critical concepts in forest and natural resources sciences, management and policy. 2. Students will be able to find, synthesize, and evaluate conclusions and evidence reported in a variety of sources and place their own academic work into the context of both seminal and contemporary scientific literature. 3.Students will be able to demonstrate the ability to communicate information effectively in oral/visual presentations and in writing for natural resource sciences. 4. Students will be able to employ appropriate methods to generate new knowledge as shown through proposal development (i.e., hypothesis generation, novel analytical techniques) and publications based on original research findings. Through required coursework, instructors will introduce, reinforce and emphasize student learning outcomes. We will directly assess all four learning outcomes at the qualifying exam and final exam stages. After the completion of an academic year's program-level assessments, the assessment coordinator will compile and analyze the data. Key features of the analyses will address whether or not (a) benchmarks were achieved, and (b) "late-academic-career" students outperformed "early-academic-career" students. The results will be shared with all UK FNR faculty members prior to the final faculty/staff meeting of each academic year. Decisions regarding programmatic improvement actions will be made at that meeting by consensus, based on discussion of the year's assessment data analyses and conclusions
14b	Describe program evaluation procedures for the proposed program. These procedures may include evaluation of courses and faculty by students, administrators, and departmental personnel as appropriate. Program review procedures shall include standards and guidelines for the assessment of student outcomes implied by the program objectives and consistent with the institutional mission. *(300 word limit)*
	See attached cirriculum map and assessment plan
14c	Identify both the direct and indirect methods by which the intended student learning outcomes (SLOs) will be assessed. *(300 word limit)*
	Outcome #1: Students will be able to describe the foundation of critical concepts in forest and natural resource sciences, management and policy. *Outcome #1 will be introduced,reinforced and emphasized through written work and presentation in required coursework (i.e.,FOR 601, FOR 602,FOR 603, and FOR 770). In particular, FOR 603 instructors indirectly assess students abilities to describe the foundation of critical concepts.Direct assessment will occur, via rubric completed by student's advisory committee, during qualifying exam and final exam stages.* *Outcome #2: Students will be able to find, synthesize, and evaluate conclusions and evidence reported in a variety of sources and place their own academic work into the context of both seminal and contemporary scientific literature. Outcome #2 will be introduced, reinforced, emphasized and indirectly assessed through written work and presentation in required coursework. Direct assessment will occur during qualifying exam and final exam stages.* *Outcome #3: Students will be able to demonstrate the ability to communicate information effectively in*

	oral/visual presentations and in writing for natural resource sciences. Outcome #3 will be reinforced, emphasized, and indirectly assessed through written work and presentation in required coursework. FOR 601 will introduce these communication skills to students. Direct assessment will occur during qualifying exam and final exam stages. *Outcome #4: Students will be able to employ appropriate methods to generate new knowledge as shown through proposal development (i.e., hypothesis generation, novel analytical techniques) and publications based on original research findings. Outcome #4 will be introduced, reinforced, emphasized and indirectly assessed through required coursework, particularly in FOR 601. Direct assessment will occur during qualifying exam and final exam stages.*
14d	**Procedures for Course Mapping of SLOs *(related to question 5b)***
14d.i	Which components will be evaluated, i.e. course mapping? *(300 word limit)*
	We Will Evaluate Our Four Student Learning Outcomes Through Formal Assessmen Methods. See Attached Documents (Phd FNRS Assessment Plan And Phd Assessment Rubric).
14d.ii	When will components be evaluated? *(150 word limit)*
	The direct methods will follow a four year assessment cycle, with all outcomes assessed during the qualifying exam and final exam stages (i.e. in year 2 and 4), but on an annual basis from the perspective of the program.
14d.iii	When will the data be collected? *(150 word limit)*
	Assessment of student learning objectives will take place during two time periods that follow a four year cycle. The PhD assessment coordinator will track data on graduate rates and graduate destinations of our graduate students as part of the Program Review process. Beginning in Year 2, all four outcomes will be evaluated during the student qualifying examination stage. The second assessment will occur closer to graduation, during the time when students are undergoing final examination. Because the qualifying examination and the final examination are required by the degree program, each assessment will be based on a complete census of the student cohort being assessed, except for students who fail to reach the stage of scheduling a final examination/dissertation defense.
14d.iv	How will the data be collected? *(150 word limit)*
	Data related to SLOs will be collected indirectly via instructors on student core courses, which function to introduce, emphasize, and reinforce outcomes. Direct assessment, via scoring rubric, will occur during qualifying and final examination stages.
14d.v	What will be the benchmarks and/or targets to be achieved? *(150 word limit)*
	Assessment of outcomes will inform the curriculum evaluation and development; benchmarks relative to these items will be based on appropriate faculty consensus and will be developed after the first initial review process.
14d.vi	What individuals or groups will be responsible for data collection? *(150 word limit)*
	The learning outcomes assessment coordinator for the College of Agriculture, Food and Environment is the College's Associate Dean for Instruction, Dr. Larry Grabau. The current MS (FNRS) degree program's learning outcomes assessment coordinator is Dr. Laura Lhotka and Dr. Steven Price, Director of Graduate Studies of the Forestry Graduate Program. It will likely be the UK FNR assessment coordinator's responsibility to lead and monitor the PhD program's assessment activities, to analyze annual assessment data, to lead the faculty discussion of assessment results each spring, and to write and submit the assessment report due annually to the university on 31 October.
14d.vii	How will the data and findings be shared with faculty? *(150 word limit)*
	These data will result in a program-level assessment report each year, in accordance with consensus decisions of the faculty. The report will be made available to all UK FNR faculty members for review prior to its submission by the assessment coordinator to the University's assessment office (due no later than 31 October).

	Whenever a periodic internal or external review of the UK FNR is conducted or Departmental strategic planning occurs, information from the annual assessment reports of relevant prior years will be incorporated appropriately into the review or planning.
14d.viii	How will the data be used for making programmatic improvements? *(150 word limit)*
	After the completion of an academic year's program-level assessments, the assessment coordinator will compile and analyze the data. Key features of the analyses will address whether or not (a) benchmarks were achieved, and (b) "late-academic-career" students outperformed "early-academic-career" students. As mentioned above, the results will be shared with all UK FNR faculty members prior to the final faculty/staff meeting of each academic year. Decisions regarding programmatic improvement actions will be made at that meeting by consensus, based on discussion of the year's assessment data analyses and conclusions.
14d.ix	What are the measures of teaching effectiveness? *(150 word limit)*
	All courses with adequate enrollment for the TCE process are evaluated by students each semester. Also, each faculty member includes a teaching portfolio whenever submitting periodic merit-review documents. The Department Chair with an ad hoc faculty committee reviews the merit-review documents, and then the Chair provides each instructor and graduate student advisor with suggestions for improvement of teaching and mentoring during annual or semi-annual performance review.
14d.x	What efforts to improve teaching effectiveness will be pursued based on these measures? *(150 word limit)*
	Workshops will either be sourced externally or developed in-house to address any appropriate issues. Additionally, faculty will make use of existing University resources (for example the Center for the Enhancement of Learning and Teaching).
14d.xi	What are the plans to evaluate students' post-graduate success? *(150 word limit)*
	UK FNR has an active advisory board, which meets annually to offer external perceptions of program success. These perceptions include the competencies of our graduates. In addition, we conduct surveys with both graduates and employers of graduates, including those employers both within and outside of academia. The surveys will focus on the students' perceived success, salaries and professional career paths as well as include the employer's perspective of the employee during the beginning of their career. Surveys of students completing the degree requirement will occur annually. Surveys of employees will occur periodically (every 3-5 years)
15. Cost and Funding of the Proposed Program[19]	
15a	Will this program require additional resources? Yes ☒ No ☐
	If "Yes," please provide a brief summary of additional resources that will be needed to implement this program over the next five years. *(300 word limit)*
	We plan to add one additional course, FOR 603. No new financial resources will be needed to implement this course.
15b	Will this program impact existing programs and/or organizational units within your institution? *(300 word limit)* Yes ☐ No ☒
	If "Yes," briefly describe.
	No.
15c	Provide adequate documentation to demonstrate sufficient return on investment to the state to offset new costs and justify approval for the proposed program. *(300 word limit)*
	A doctoral program in Forest and Natural Resource Sciences or related disciplines (i.e., Forest Ecology, Wildlife Ecology, Conservation Biology) is not offered by any other universities within Kentucky. We continue to lose high quality students to neighboring states. Our proposed doctoral program in FNRS will become the only such program in the Commonwealth resulting in increased enrollment for UK, increased research and

[19] For questions about cost and funding of the program, please contact your department chair, business officer, or associate dean for academic affairs.

	teaching capacity for the Commonwealth, increased research funding to the UK Research Foundation, and, ultimately, a greater understanding of forestry, wildlife, and natural resource issues in Kentucky. We expect interest in this program to be strong during the first 1-2 years, with expansion resulting from successful administration of the program.

16.* Budget Funding Sources, by Year of Program

All the fields in number 16 are required for the CPE's pre-proposal form. Estimate the level of new and existing resources that will be required to implement and sustain the program using the spreadsheet below. Please answer in terms of dollar amounts. All narratives have a 100-word limit. (Pre-proposal question: Cost, A)

Total Resources Available from Federal Sources (Federal sources include grants, earmarks, etc.)	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*65200*	*132920*	*175566*	*183761*
Existing	*32000*	*32600*	*33230*	*33892*	*34587*
Narrative/Explanation:	*FNR has existing federal funds (McIntire-Stennis capacity grant) which we will use to support 1 graduate student per year. However, external federal grants (i.e., NIH, NSF, NIFA) obtained by FNR faculty will likely provide much of the student support. Above, we estimate that student stipend and tuition will be covered through these new external grants, with stipends equaling $20000 per year and first year tuition at $12,000/yr with a 5% increase each year. Estimates are based enrolling 1 student in year 1covered through existing funds; and 2 new students per year in years 2, 3, and 4 supported through new federal funds. In Year 5, we project one student being supported by existing McIntire-Stennis funds and a second student supported through new funds.*				

Total Resources Available from Other Non-State Sources (Non-state sources include philanthropies, foundations, individual donors, etc.)	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*0*	*0*	*0*	*0*
Existing	*60000*	*60000*	*60000*	*60000*	*60000*
Narrative/Explanation:	*FNR has2 endowments, which wecould use to support 3 graduate students per yearat $20000 stipend (totaling $60000). Currently, we use the endowment funds to support Teaching Assistants; tuition costs for Teaching assistants are covered by the Graduate School. We estimate to fund one PhD student per year through these existing endowment funds at 20,000, although up to 3 students could be funded through these endowments if needed.*				

State Resources (State sources include general fund revenue, grants, pass-thru funds, etc.)	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*0*	*0*	*0*	*0*
Existing	*0*	*0*	*0*	*0*	*0*
Narrative/Explanation:	*No state resources are required for the proposed program*				

Internal (The source and process	1st Year	2nd Year	3rd Year	4th Year	5th Year

of allocation and reallocation should be detailed, including an analysis of the impact of the reduction on existing programs and/or organization units.)[20]:					
(New) Allocated Resources	*0*	*0*	*0*	*0*	*0*
(Existing) Reallocated Resources	*0*	*0*	*0*	*0*	*0*
Narrative/Explanation:	*No changes in internal allocation are required*				
Student Tuition (Describe the impact of this program on enrollment, tuition, and fees.)	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*0*	*0*	*0*	*0*
Existing	*0*	*0*	*0*	*0*	
Narrative/Explanation:	*Departmental funds (federal and non-state sources) will cover student tuition*				
Total Funding Sources	1st Year	2nd Year	3rd Year	4th Year	5th Year
Total New	*0*	*65200*	*132920*	*175566*	*183761*
Total Existing	*92000*	*92600*	*93230*	*93892*	*94587*
TOTAL FUNDING SOURCES	92000	157800	226150	269458	278348
17.* Breakdown of Program Expenses/Requirements[4]					
(Please note – all the fields in number 17 are required for the CPE's pre-proposal form.) (Pre-proposal question: Cost, B)					
Staff: Executive, Administrative & Managerial (Include salaries and whether new hires will be part time or full time.)	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*0*	*0*	*0*	*0*
Existing	*0*	*0*	*0*	*0*	*0*
Narrative/Explanation[21]:	*No new staff hires are needed for the proposed program*				
Other Professional (Include salaries.)	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	0	0	0	0	0
Existing	0	0	0	0	0
Narrative/Explanation:	No new professional positions are needed for the proposed program				
Faculty (Include salaries and whether new hires will be part time or full time.)	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*0*	*0*	*0*	*0*

[20] The source and process of allocation and reallocation should be detailed, including an analysis of the impact of the reduction on existing programs and/or organizational units.

[21] Discuss whether new hires will be full-time or part-time.

Existing	*0*	*0*	*0*	*0*	*0*
Narrative/Explanation[22]:	*No faculty lines are needed for the proposed program*				
Graduate Assistants (Include salaries and/or stipends.)[23]	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*40000*	*80000*	*120000*	*120000*
Existing	*40000*	*40000*	*40000*	*40000*	*40000*
Narrative Explanation/Justification:	*Student funding will come from extramural grant awards to participating faculty and otherexisting departmental funds; We estimate stipend at $20,000/yr; Y1 = 2 students, Y2 = 4 students, Y3 = 6 students, Y4 = 8 students, Y5 = 8 students. We note that the majority of students will be supported by external funds obtained by FNR faculty.*				
Student Employees (Include salaries and/or stipends.)	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*0*	*0*	*0*	*0*
Existing	*0*	*0*	*0*	*0*	*0*
Narrative Explanation/Justification:	*Student employees are not expected to be required*				
Equipment and Instructional Materials	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*0*	*0*	*0*	*0*
Existing	*0*	*0*	*0*	*0*	*0*
Narrative Explanation/Justification:	*New equipment and instructional materials are not required*				
Library (Include new journal subscriptions, collections, and electronic access.)	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*0*	*0*	*0*	*0*
Existing	*0*	*0*	*0*	*0*	*0*
Narrative Explanation/Justification:	*New library resources will not be required*				
Contractual Services	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*0*	*0*	*0*	*0*
Existing	*0*	*0*	*0*	*0*	*0*
Narrative Explanation/Justification:	*No contractual services will be needed*				
Academic and/or Student Services	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*0*	*0*	*0*	*0*
Existing	*0*	*0*	*0*	*0*	*0*
Narrative Explanation/Justification:	*No academic and/or student services are anticipated*				

[22] If new hires are involved, explain whether new hires will be full-time or part-time.

[23] Identify the number of assistantships/stipends to be provided; include the level of support for each.

Other Support Services	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*0*	*0*	*0*	*0*
Existing	*0*	*0*	*0*	*0*	*0*
Narrative Explanation/Justification:	*No other support services are anticipated*				
Faculty Development (Include travel, conference fees, consultants, etc.)	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*0*	*0*	*0*	*0*
Existing	*0*	*0*	*0*	*0*	*0*
Narrative Explanation/Justification:	*Faculty development costs are not anticipated at this time*				
Assessment (Include personnel, software tools, data collection tools, survey administration, outside consulting services, etc.)	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*0*	*0*	*0*	*0*
Existing	*0*	*0*	*0*	*0*	*0*
Narrative Explanation/Justification:	*Assessment tools are currently in place*				
Student Space and Equipment	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*0*	*0*	*0*	*0*
Existing	*0*	*0*	*0*	*0*	*0*
Narrative Explanation/Justification:	*Student space and equipment are currently available (and provided to current PhD students that are supported by FNR faculty but obtaining degree from other program)*				
Other	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*0*	*0*	*0*	*0*
Existing	*0*	*0*	*0*	*0*	*0*
Narrative Explanation/Justification:					
Total Expenses/Requirements	1st Year	2nd Year	3rd Year	4th Year	5th Year
New	*0*	*40000*	*80000*	*120000*	*120000*
Existing	*40000*	*40000*	*40000*	*40000*	*40000*
TOTAL Program Budgeted Expenses/Requirements:	*560000*				
GRAND TOTAL	1st Year	2nd Year	3rd Year	4th Year	5th Year
Total Funding Sources	***92000***	***157800***	***226150***	***269458***	***278348***
Total Expenses/Requirements	***40000***	***80000***	***120000***	***160000***	***160000***
TOTAL NET COST:	***52000***	***77800***	***106150***	***109458***	***118348***

18. Course Descriptions (*complete for question 11p*)	
18a	**Program Core Courses (includes pre-major and pre-professional courses)**
Prefix & Number	Course Description (from the Bulletin or the most recent new/change course form)
FOR 601	*A study of research methods, procedures, and techniques used in forestry. Major emphasis will be placed on problem analysis and methods of conducting organized research. Prereq: Graduate standing*
FOR 602	*An advanced course that examines world and transboundary issues related to renewable natural resources. Students will attend a series of lectures, discuss assigned reading, and identify issues for further study. Student research papers related to those issues will be presented and discussed in a seminar format. Prereq: Graduate standing*
FOR 603	*A graduate level course focused on evaluating, discussing, and tracking the progression of the science and philosophy behind select topics in natural resource sciences, management and policy. Prereq: Graduate standing*
FOR 770	*Reports and discussion on recent research and current literature. Credit is given to those who satisfactory present papers, lead discussion and complete additional assignments. Required of all graduate students. Can be repeated to a maximum of 3 credits. Prereq: Graduate standing*
18b	**Program Guided Electives Courses (for the major)**
Prefix & Number	Course Description (from the Bulletin or the most recent new/change course form)
18c	**Program Free Electives Courses**
Prefix & Number	Course Description (from the Bulletin or the most recent new/change course form)
	I list some courses below but see attached document for a complete list (Free Elective Course Listings)
BAE 532	*Introduction to principles of fluvial geomorphology for application in restoring impaired streams. Topics include channel formation processes*
BIO 608	*This course uses an evolutionary approach to examine behavior and life histories.*
BIO 609	*This course discusses the processes that determine population distributions and dynamics and community structure for both plants and animals.*

ENT 564	*A study of insect taxonomy including the collection, preparation, and identification of adult insect specimens.*
ENT 667	*This course will examine circumstances that allow introducted species to become invasive, how invasive species threaten our resources, and approaches to minimizing the incidence and impact of invasions.*
PLS 650	*An advanced course on the relationship between media and the root systems of plants growing therein*
PLS 660	*A critical evaluation of the current research status in selected aspects of soil biology*
STA 671	*Simple linear regression, elementary matrix algebra, general linear model, multiple regression, analysis of variance tables, testing of subhypotheses, nonlinear regression, step-wise regression, partial and multiple correlation*

18d	**Courses for a Track.** (If multiple tracks are available, click HERE for a template for additional tracks. Append a PDF to the end of this form with each track's courses and descriptions.	
Prefix & Number	Course Type	Course Description (from the Bulletin or the most recent new/change course form)
	☐ Track Core ☐ Track Elective	
	☐ Track Core ☐ Track Elective	
	☐ Track Core ☐ Track Elective	
	☐ Track Core ☐ Track Elective	
	☐ Track Core ☐ Track Elective	
	☐ Track Core ☐ Track Elective	
	☐ Track Core ☐ Track Elective	
	☐ Track Core ☐ Track Elective	
	☐ Track Core ☐ Track Elective	
	☐ Track Core ☐ Track Elective	

19. Specific faculty involved in the degree program. [SACS Faculty Roster]

Fill out the SACS[24]-required faculty roster below, for full-time and part-time faculty teaching in the program. Abbreviations for the NAME and COURSES TAUGHT columns are below the table. *Please contact Institutional Effectiveness for help with this question. (similar to question 4d)*

NAME List name & Identify faculty member as F or P.	COURSES TAUGHT Include term; course prefix, number and title; & credit hours. (D, UN, UT, G)	ACADEMIC DEGREES AND COURSEWORK List relevant courses taught, including institution and major. List specific graduate coursework, if needed	OTHER QUALIFICATIONS AND COMMENTS Note qualifications and comments as they pertain to course taught.	NEW COURSES Include course prefix, number, and title.
Mary Arthur (F), Professor	*FOR 340 Forest Ecology; Fall 2013, 2014, 2015, 2016, 2017; 4 CH (U)* *NRE 471 Senior Problems in Natural Resources Environmen- tal Science; Spring 2014, 2015, 2016; 4 CH (U)* *NRE 320 Natural Resource and Environmental Analysis; Spring 2014; 4CH (U)*	*Ph.D. Forest Ecology, minor in Soil Science, Cornell University;* *M.F.S. Forest Science, Yale School of Forestry & Environmental Studies* *B.A. Environmental Studies, Colby College*		
Chris Barton (F), Professor	*FOR 460 Forest Hydrology and Watershed Management; Fall 2013, 2014, 2015; 4 CH (U)* *FOR 356 Landscape Manage-ment, Spring 2013, 2014, 2015, 2016,*	*Ph.D. Soil Science, University of Kentucky* *M.S. Plant and Soil Sciences, University of Kentucky* *B.S. Biology Centre College*		

[24] Southern Association of Colleges and Schools Commission on Colleges (SACS).

	2017,1 CH (U)			
Terry Conners (F), Associate Professor	*FOR 359 Forest Operations and Utilization; Spring 2013, 2014, 2015, 2016; 3 CH (U)*	*Ph.D. Virginia Polytechnic Institute and State University Major: Forestry and Forest Products (Wood Engineering) M.S. University of Massachusetts-Amherst Major: Wood Science and Technology B.S. The Pennsylvania State University Major: Forest Products*		
Marco Contreras (F), Associate Professor	*FOR 425 Forest Management; Fall 2013, 2014, 2015, 2016; 4 CH (U)* *FOR 357 Inventory and Measurements Il; Spring 2013, 2014, 2015, 2016; 2 CH (U)*	*Ph.D. in Forestry (Forest Operations Planning) College of Forestry and Conservation University of Montana M.S. in Forestry (Forest Transportation Planning) College of Forestry and Conservation University of Montana B.S. Forest Sciences (Harvesting and Management) Facultad de Ciencias Forestales Universidad de Talca, Talca, Región del Maule, Chile*		
John Cox (F), Assistant Professor	*FOR 101 Introduction to Wildlife Conservation; Fall 2014, 2015, 2016, 2017; 3 CR (U)* *FOR 230 Conservation Biology; Fall 2013, 2014, 2015, 2016, 2018; 3 CR*	*Ph.D. Animal Sciences, University of Kentucky M.S. Biology, Morehead State University B.S. Major Biology/Minor Chemistry Morehead State University*		

	(U) *FOR 356 Landscape Assessment; Spring 2013, 2014, 2015, 2016, 2017; 1 CH (U)* *FOR 770; Fall 2013, 2014, 2015, 2016, 2017; 1 CH (G)*			
Michael Lacki (F), Professor	*FOR 370 Wildlife Biology and Management; Spring 2013, 2014, 2015, 2016; 4 CH (U)* *FOR 602Renewable Natural Resources in a Global Perspective; Fall 2017; 3 CH (G)*	*Ph.D. Zoology, North Carolina State University* *M.S. Zoology, The Ohio State University* *B.S. Biology, University of Dayton*		
John Lhotka (F), Associate Professor	*FOR 358 Silvicultural Practices; Spring 2013, 2014, 2015, 2016, 2017, 2018; 3 CH (U)* *FOR 480 Integrated Forest Resource Management; spring 2013, 2014, 2015, 2016, 2017; 5 CH (U)*	*Ph.D. Silviculture, Auburn University* *M.S. Forest Resource Management, Southern Illinois University* *B.S. Forestry, Southern Illinois University*		
Steven Price (F), Associate Professor	*FOR 510: Herpetology; Spring 2013, 2014, 2015, 2016, 2017, 2018; 4cr (U,G)* *FOR 540: Urban Ecology; Fall 2014, 2015; 3cr (U, G)*	*Ph.D., Biology, Wake Forest University, 2011* *M.S., Environmental Science and Policy, University of WI-Green Bay, 2003* *B.S., Environmental Science & Biology (Double Major),*		

	FOR 530: Freshwater Ecology; Fall 2017; 3 CH(U, G) *NRE 320: Natural Res. and Env. Analysis: Costa Rica;Summer 2013, 2014, 2016, 2017; 3 CH(U)* *FOR 601: Research Methods in Forestry; Fall 2017; 3 CH(G)* *FOR 770: Reptile/Amphibian Conservation and Management--Spring 2016, 2018; 1 CH(G)*	*University of WI-Green Bay, 2000*		
Jim Ringe	*FOR 100 Introduction to Forestry; Spring 2013, 2014, 2015, 2016; 3 CH (U)* *FOR 200 Basics of Geospatial Technology; Fall 2013, 2014, 2015, 2016; 3 CH (U)* *FOR 260 Forest Products and Wood Science; Fall 2013, 2014, 2015, 2016; 4 CH (U)*	*Ph.D. Forestry, Purdue University* *M.S. Agriculture, University of Kentucky* *B.S. Forestry University of Kentucky*		

	FOR 320 Forest Valuation and Economics; Fall 2013, 2014, 2015, 2016; 3 CH (U) *FOR 359 Forest Operations and Utilization; Spring 2013, 2014, 2015, 2016; 3 CH (U)* *FOR 480 Integrated Forest Resource Management; Spring 2013, 2014, 2015, 2016; 5 CH (U)*			
Matt Springer	*FOR 770; Fall 2017; 1 CH (G)*	*Ph.D., Agricultural Sciences, Southern Illinois University* *M.S., Wildlife Ecology, University of Delaware* *B.S., Environmental Sciences, Juniata College*		
Jeff Stringer	*FOR 359 Forest Operations and Utilization; Spring 2013, 2014, 2015, 2016; 3 CH (U)*	*Ph.D. Plant Physiology/Biochemistry/Mole- cular Biology University of Kentucky* *M.S.Forestry, University of Kentucky* *B.S.Forestry, University of Kentucky* *Pre-Professional, Forestry, Western Kentucky University*		
Jian Yang	*FOR 330 GIS and Spatial Analy- sis; Fall 2015, 2016; 3CR (U)*	*Ph.D. Forestry, University of Missouri-Columbia* *M.S. Ecology, Institute of*		

	FOR 570 Landscape Ecology for Natural Resources; Fall 2016, 2017; 3 CR (U G) *FOR 770; Fall/Spring 2016, 2017; 1 CR (G)*	*Botany, Chinese Academy of Science, Beijing, China* *B.S. Geography, Shaanxi Normal University, Xi'an, China*		
Thomas Ochuodho	*FOR 280 Forest Resource Policy and Law; Fall 2017; 3 CR (U)*	*Ph.D., Forestry, University of New Brunswick* *M.Phil, Forest Economics and Management, Moi University* *B.S. Forestry, Moi University*		
FT = full time PT= part time	D = developmental UN = undergraduate nontransferable		UT = undergraduate transferable G = graduate	

SECTION C – ADVANCE PRACTICE DOCTORATE			
20.* Advance Practice Doctorate New Program Proposal			
	Complete this section only if you answered "YES" to 12i.		
20a*	Does the curriculum include a clinical or experiential component?	Yes ☐	No ☐
	If "Yes," list and discuss the nature and appropriateness of available clinical sites. (*300 word limit*)		
20b*	Describe how the doctorate builds upon the reputation and resources of the existing master's degree program in the field. (*300 word limit*)		
20c*	Explain the new practice or licensure requirements in the profession and/or requirements by specialized accrediting agencies that necessitate a new doctoral program. (*300 word limit*)		
20d*	Explain the impact of the proposed program on undergraduate education at the institution. Within the explanation, note specifically if new undergraduate courses in the field will be needed. (*300 word limit*)		
20e*	Provide evidence that funding for the program will not impair funding of any existing program at any other public university. (*300 word limit*)		

11n

Name of Degree Program and/or Concentration/Specialty	Total # of hours required for degree	Number of hours in degree program core* (may be same # as total # of hours required for degree)	Complete as Applicable		
			Number of required hours for concentration (master's)/ specialty **(doctorate)	Number of hours in guided electives***	Number of hours in free electives****
Natural Resources	36	12	0	24	0

* **Program Core**: Courses required by ALL students in the program/major—includes pre-major or pre-professional courses.
****Concentration/Specialty**: Courses required for all students pursuing a particular area of concentration (master's)/specialty (doctoral)
*****Guided Electives**: specified list of program core courses and/or concentration (specialty) electives that students can take to satisfy elective requirements.
******Free Electives**: non specified course electives that are open to students to take (i.e., general electives).

12f

Academic Year	Degrees Conferred	Majors (Headcount) – Fall Semester
2015-2016	**0**	**2**
2016-2017	**0**	**4**
2017-2018	**0**	**6**
2018-2019	**2**	**8**
2019-2020	**2**	**8**

GRADUATE COUNCIL MINUTES
May 11, 2017
Location: Room 104, Gillis Building
Chair: Dr. Brian Jackson

MEMBERS PRESENT

Prof. Michael Barrett
Prof. Jeffery Bieber
Prof. Penni Black
Prof. Clayton Thyne
Mr. Patrick Herald
Prof. Doreen Maloney
Prof. Timothy McClintock
Prof. Jenny Minier
Prof. Kristen Perry
Prof. Steven Rankin
Prof. Zixue Tai
Prof. Olivier Thibault
Prof. Lisa Vaillancourt

MEMBERS ABSENT

Prof. John Anthony
Ms. Candice Davis
Prof. Andrew Doolen
Prof. Brandi Frisby
Prof. Ana Liberato
Prof. Debra Moser
Prof. Mary Shake
Prof. Mirek Truszczynski

I DISCUSSION ITEMS

1. Prof. Spear updated the members on the progress of Blue Ribbon Panel
2. Prof. Jackson updated the members on Block Funding Metrics

II. ACTION ITEMS

A. PROGRAMS, CERTIFICATES, AND POLICIES

1. Prof. Maloney presented and made a motion to approve the proposed MFA in Curatorial Studies. The motion was seconded by Prof. Thibault and unanimously approved.

2. Prof. McClintock presented and made a motion to approve the proposed PhD in Forest and Natural Resource. The motion was seconded by Prof. Black and unanimously approved

3. Prof. Minier presented and made a motion to approve the proposed Applied Behavior Analysis. The motion was seconded by Prof. Perry and unanimously approved.

4. Prof. Barrett presented and made a motion to approve the proposed PharmD-MBA Dual Degree. The motion was seconded by Prof. Maloney and unanimously approved.

5. Prof. Jackson presented and made a motion on behalf of Prof. Liberato to approve the proposed MA in Art Administration. The motion was seconded by Prof. Maloney and unanimously approved

6. Prof. Perry presented and made a motion to approve the proposed MFA in Creative Writing. The motion was seconded by Prof. Maloney and unanimously approved

B. COURSE PROPOSALS

1. P-S 736 Comparative Political Behavior. Prof. Bieber presented and made a motion to approve the proposed new course. The motion was seconded by Prof. Perry and unanimously approved.

2. P-S 738 Civil Conflict. Prof. Bieber presented and made a motion to approve the proposed new course. The motion was seconded by Prof. Perry and unanimously approved.

3. P-S 739 Comparative Political Institutions. Prof. Bieber presented and made a motion to approve the proposed new course. The motion was seconded by Prof. Minier and unanimously approved.

4. PHA 423G Exploring the Dark Side of Medicine. Prof. Black presented and made a motion to approve the proposed new course. The motion was seconded by Prof. McClintock and unanimously approved.

5. EGR 649 Power and Energy Experiences. Prof. Rankin presented and made a motion to approve the proposed course change. The motion was seconded by Prof. Perry and unanimously approved.

6. ENG 607 Graduate Writing Workshop. Prof. Perry presented and made a motion to approve the proposed course change. The motion was seconded by Prof. Bieber and unanimously approved.

7. EPE 785 Independent Studies in Educational Policy Studies and Evaluation. Prof. Tai presented and made a motion to approve the proposed course change. The motion was seconded by Mr. Herald and unanimously approved.

8. PHA 421G Principles of Drug Action. Prof. Black presented and made a motion to approve the proposed new course. The motion was seconded by Prof. Tai and unanimously approved.

The Council meeting adjourned at 3:05 pm.

DispNameLastFirst	GFProgDesc	GFMembership
Bae, Younsoo, Ph.D.	Pharmaceutical Sciences	FULL
Bell, Shannon E., Ph.D	Sociology	FULL
Choi, Namjoo, Ph.D.	Library Science	FULL
Curwood, Anastasia C., Ph.D.	History	FULL
Fountain III, William M., Ph.D.	Entomology	FULL
Graham, Kenneth R., Ph.D.	Chemistry	FULL
Guy, Rodney K., Ph.D.	Pharmaceutical Sciences	FULL
Hawkins-Lear, Sarah, Ed.D.	Educat	FULL
Hawkins-Lear, Sarah, Ed.D.	Special Education	FULL
Huber, Jeffrey T., Ph.D.	Technology	FULL
Jo, Misung, Ph.D.	Pharmacology	FULL
Johnson, Jeffrey, M. Arch	Historic Preservation	FULL
Jones, Willis, Ph.D.	Educational Policy Studies &	FULL
Jones, Willis, Ph.D.	Educational Sciences	FULL
Jung, Lee Ann, Ph.D.	Inclusive Education	FULL
Kekenes-Huskey, Peter M., Ph.D.	Chemistry	FULL
Kolesar, Jill, PharmD	Pharmaceutical Sciences	FULL
Lee, Chad D., Ph.D.	Integrated Plant and Soil Science	FULL
McCarthy, John J., Ph.D.	Physiology	FULL
Nash, Phyllis J., Ed.D.	Physician Assistant Studies	FULL
Newfont, Kathryn D., Ph.D.	History	FULL
Noehren, Brian W., PhD	Exercise Science	FULL
Pienkowski, David, Ph.D.	Engineering in Health Care	FULL
Reybarreau, Joseph A., M.S.	Interior Design	FULL
Risko, Chad M., Ph.D.	Chemistry	FULL
Shane, Rachel, Ph.D.	Arts Administration	FULL
Stamatel, Janet P., Ph.D.	Sociology	FULL
Takenaka, Akiko, Ph.D	History	FULL
Unrine, Jason M., Ph.D.	Integrated Plant and Soil Science	FULL
Wallace, Megan B., Ph.D	Philosophy	FULL
Warshawsky, Nora E., PhD, RN,	Nursing (Masters)	FULL

Warshawsky, Nora E., PhD, RN,	Nursing (PhD)	FULL
Yang, Chengfeng, Ph.D.	Integrated Biomedical Sciences	FULL
Yang, Chengfeng, Ph.D.	Toxicology	FULL
Zeadally, Sherali, Ph.D.	Information Communication	FULL
Darbee, Joan C., Ph.D.	Rehabilitation Sciences	AUX
Yang Dr., Xiaojuan, Dr.	Integrated Plant and Soil Science	AUX
Adams, Amanda A., PhD	Veterinary Science	ASSO
Adler, Melissa A., Ph.D.	Library Science	ASSO
Alilain, Warren J., Ph.D.	Anatomy and Neurobiology	ASSO
Awuah, Samuel G., PhD	Chemistry	ASSO
Bachstetter, Adam D., Ph.D.	Anatomy and Neurobiology	ASSO
Badour Hirsch, Christal L., Dr.	Psychology	ASSO
Barnes, Tiffany D., Ph.D	Political Science	ASSO
Bement, Marie H., Dr.	Rehabilitation Sciences	ASSO
Brainson, Christine F., Ph.D.	Toxicology	ASSO
Brownell, Mary, Dr.	Rehabilitation Counseling	ASSO
Brown-Iannuzzi, Jazmin L., Dr.	Psychology	ASSO
Burns, Christopher S., Ph.D.	Information Communication	ASSO
Campbell, Jennifer L., PhD	Musicology	ASSO
Chapman, Seth E., DVM	Veterinary Science	ASSO
Chen, Jin, Ph.D.	Computer Science	ASSO
Christmann, Undine, Ph.D.	Veterinary Science	ASSO
Closson, Stacy R., PhD	Diplomacy	ASSO
Connors-Manke, Elizabeth A.,	Music Performance	ASSO
Cook, Aaron M., PharmD	Pharmaceutical Sciences	ASSO
Covert, Lyn R.	Communication Disorders	ASSO
Covert, Lyn R.	Rehabilitation Sciences	ASSO
Davis, Stephen R., Ph.D.	History	ASSO
Divine, Holly S., Pharm.D.	Public Health	ASSO
Dovel, Jason L., DMA	Music Performance	ASSO
Dovel, Jason L., DMA	Musicology	ASSO
Farr, Rachel H., Dr.	Psychology	ASSO
Fay, Lindsey L., M.S.	Interior Design	ASSO
Ferrare, Joseph, Ph.D.	Educational Policy Studies &	ASSO
Ferrare, Joseph, Ph.D.	Educational Sciences	ASSO
Gaskill, Cynthia L., Ph.D.	Veterinary Science	ASSO
Grady, Martha E., Ph.D.	Mechanical Engineering	ASSO
Haglund, Jillienne E., Ph.D.	Political Science	ASSO
Hall, Jeremy L., Ph.D.	Master of Public Administration	ASSO
Hall, Jeremy L., Ph.D.	Public Administration (PhD)	ASSO
Hasegawa, Atsushi, Ph.D.	Teaching World Languages	ASSO
Holcomb, Gay L., Dr.	Educational Policy Studies &	ASSO
Hudson, Karen E.	Historic Preservation	ASSO

Hunter, Jennifer L., Ph.D.	Family Sciences	ASSO
Inouye, Brian, Dr.	Biology	ASSO
Kalbfleisch, Theodore S., Ph.D.	Veterinary Science	ASSO
Kaufmann, Renee, Ph.D.	Information Communication	ASSO
Kenworthy, Scott, Dr.	History	ASSO
Kidwell, Blair, Ph.D.	Business Administration (PhD)	ASSO
Kiesel, Kyle B.	Rehabilitation Sciences	ASSO
Kim, Youngseek, Ph.D.	Library Science	ASSO
Kudrimoti, Mahesh R., M.B.B.S.	Biomedical Engineering	ASSO
Kudrimoti, Mahesh R., M.B.B.S.	Radiation Science	ASSO
Kutkut, Ahmad M., DDS, MS	Clinical Sciences	ASSO
Kutkut, Ahmad M., DDS, MS	Dentistry	ASSO
Lance, Stacey L., Dr.	Biology	ASSO
Lane, Justin, Ph.D.	Special Education	ASSO
Lee, Donna, Ph.D.	Special Education	ASSO
Leung, Steve W., M.D.	Behavioral Science	ASSO
Lowman, Julie J., PhD	Rehabilitation Sciences	ASSO
Luo, Wei, Ph.D.	Radiation Science	ASSO
Manson, Andrew J., M.Phil.	Architecture	ASSO
Manson, Andrew J., M.Phil.	Historic Preservation	ASSO
Mathew, Aju, M.D.	Epidemiology and Biostatistics	ASSO
McGarry, Ronald C., M.D., Ph.D.	Radiation Science	ASSO
Miller, Justin D., Ph.D.	Social Work (Master's)	ASSO
Miller, Justin D., Ph.D.	Social Work (PhD)	ASSO
Miura, Yoko, Dr.	Social Work (PhD)	ASSO
Nemer, David, Ph.D.	Information Communication	ASSO
Ochuodho, Thomas O., Ph.D.	Agricultural Economics	ASSO
Ochuodho, Thomas O., Ph.D.	Forestry	ASSO
Parrish, Evelyn M., APRN-CNS	Nursing (Masters)	ASSO
Parrish, Evelyn M., APRN-CNS	Nursing (PhD)	ASSO
Parry, Selina, Dr.	Rehabilitation Sciences	ASSO
Patel, Samirkumar P., Ph.D.	Physiology	ASSO
Plasencia, Julie, PhD	Nutrition and Food Systems	ASSO
Pokhrel, Damodar, Ph.D.	Radiation Science	ASSO
Radtke, Rebekah S., M.Arch.	Interior Design	ASSO
Reed, Stephen M., BS, DVM	Veterinary Science	ASSO
Reinking, David, Dr.	Educational Sciences	ASSO
Rintamaa, Margaret, Ed.D.	Curriculum & Instruction	ASSO
Rintamaa, Margaret, Ed.D.	Educational Leadership Studies	ASSO
Rose, Robert T., MFA	Historic Preservation	ASSO
Rote, Sunshine, Dr.	Social Work (PhD)	ASSO
Russon, John, Dr.	Philosophy	ASSO
Saeed, Hayder, M.D.	Epidemiology and Biostatistics	ASSO

Salaimeh, Ahmad A., Ph.D.	Mechanical Engineering	ASSO
Sampson, Shannon O., Ph.D.	Educational Sciences	ASSO
Santollo, Jessica C., Phd	Biology	ASSO
Schell, Randall M., M.D.	Outside Member (UK or non-UK)	ASSO
Schinberg, Jill E., MFA	Arts Administration	ASSO
Sciascia, Aaron D., Dr.	Rehabilitation Sciences	ASSO
Sheppard-Jones, Kathleen A.,	Rehabilitation Counseling	ASSO
Spriggs, Amy, Ph.D.	Special Education	ASSO
Sterrett, Emma M., Dr.	Social Work (PhD)	ASSO
Stradling, David, Dr.	History	ASSO
Terada, Masafumi, Dr.	Rehabilitation Sciences	ASSO
Tsikerdekis, Michail, Ph.D.	Information Communication	ASSO
Turner, Helen A., M.S.	Interior Design	ASSO
Vanderford, Nathan L., Ph.D.	Toxicology	ASSO
Verma, Ashutosh, Ph.D.	Veterinary Science	ASSO
Vermeulen, Lee C., R.Ph., M.S.	Pharmaceutical Sciences	ASSO
Villano, John L., M.D., Ph.D.	Pharmaceutical Sciences	ASSO
Waddington, Joseph, Ph.D.	Educational Policy Studies &	ASSO
Waddington, Joseph, Ph.D.	Educational Sciences	ASSO
Wages, Nolan A., Dr.	Outside Member (UK or non-UK)	ASSO
Welling, Bradley, Dr.	Behavioral Science	ASSO
Wellingon, Cheryl, Dr.	Nutritional Sciences (PhD)	ASSO
Westerfeld, Jennifer, Dr.	History	ASSO
Willner, Lisa, Dr.	Educational & Counseling	ASSO
Worth, Benjamin J.,	Educational Policy Studies &	ASSO
Zaytseva, Yekaterina Y., Ph.D.	Toxicology	ASSO
Zilis, Michael A., Ph.D.	Political Science	ASSO

Graduate Curriculum Committee (GCC) Meeting Minutes, February 3, 2017

Members present: Harmon, Wagner, Vaillancourt, Thomas, Dillon, and Grabau (chairing and recording minutes).

Guests present: Price (presenting), Lacki, Baker, Lhotka, Yang (Forestry representatives).

Agenda Item #1: Fourth discussion of the PhD proposal from the Forestry Department (Forest and Natural Resource Sciences).

Grabau noted that since the headcount of voting members for the GCC is nine, and five members were present, a vote could be taken on this proposal today, should that be the will of the GCC.

Price provided an excellent summary of each of the three previous meetings during which the PhD proposal had been discussed, including the ways in which the current iteration of the proposal is different from the original version. Further, he noted that three doctoral candidates were currently in talks with the department about signing on for doctoral studies. A key concern mentioned in a previous meeting was that some GCC members felt it a bit unusual that a multidisciplinary program would emerge from a single department.

Forestry faculty commented in turn, asserting, for example, that other departments have doctoral programs with fewer faculty.[1] The faculty of the department were described as very much multidisciplinary internally.[2] The difficulty of recruiting doctoral candidates was again emphasized, as was a lack of capacity to compete for research grants and the difficulty of competing for early career faculty to the department. In addition, administrative complexities of managing departmental graduate students who were in graduate programs outside the department but, for example, serving as teaching assistants within the department, were cited as hardships.

The GCC noted that a key member (Coyne, IPSS DGS, who had raised some concerns about the proposal) was absent, due to a class conflict. The tone of Forestry's response was somewhat concerning (not entirely focused on graduate student opportunities and advantages; instead, drifting into departmental needs and benefits). A question was asked about management of current graduate students, assuming this program is ultimately approved; those students would be handled differently depending on how far along they were in their programs. Price emphasized that from the outset this proposal was targeted to meet student needs—to give them a strong option to complete their doctoral studies at the University of Kentucky. Baker urged the GCC to simultaneously consider the pending department name change (from the "Department of Forestry" to the "Department of Forestry and Natural Resources."[3]

In order to allow for as open of a discussion of the proposal as possible, the chair asked the Forestry representatives to leave the room. (Of course, Wagner, as a GCC member remained.)

A rich discussion ensued. Among other points of conversation, one member openly wished that we could have a broader representation of the GCC prior to taking such a substantial vote. Another expressed some concern that "Natural Resources" marked a very broad range of "coverage" which was well beyond what the program could conceivably deliver; one of the potential issues with that "marking" is that other doctoral programs beyond the college might have some territorial concerns.

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[1] While this statement was not addressed verbally during the meeting, it turns out that the only such case is Plant Pathology, which has suffered a recent net loss of two faculty lines and thus is marginally smaller than Forestry.

[2] Prior GCC discussions about the level of possible multidisciplinary impact of such a program were well beyond the scope of the Forestry faculty's current level of multidisciplinary reach; of course, any department in the College is internally multidisciplinary.

[3] Grabau indicated that there exist formal channels for consideration of departmental name changes; an oral request from the Chair was not the appropriate channel. Instead, Lisa Collins, who handles such administrative affairs, will initiate this activity.

The possibility of a truly multi-disciplinary program (at least, college-wide) was apparently not an interest of Forestry, even as Provost Tracy has assembled a campus-level committee to promote such graduate programs. Ultimately, Wagner moved, Vaillancourt seconded, and the motion carried by a 5-0 vote.

Note that curricular decisions are indeed the prerogative of faculty bodies such as this one. However, when financial implications are involved, administration also has a voice. Thus, since this proposal requires a college investment, it also will require administrative approval prior to a move to the Graduate Council.

[Insert Degree Program Name & CIP Code Here]						
Core Courses (i.e., Courses required by ALL students in the Major--includes Premajor or Preprofessional courses)						
Course Prefix	**Course #**	**Course Title**	**Course Description**	**Type of Course: program core or pre-major or pre-professional**	**Credit Hours**	**Existing (E) or New (N) Course**
FOR	770	Forestry Seminar 3 credits required of 1 credit course)	Various titles with unique topic and instructor (see below)		3	E
FOR	603	New Course: Foundations in Natural Resource Sciences	Foundations in Natural Resource Sciences is a 3-credit, graduate level course focused on evaluating, discussing, and tracking the progression of the science and philosophy behind select topics in natural resource sciences, management and policy.		3	N
FOR	601	Research Methods in Forestry	course focuses on strengthening knowledge and professional skill applicable to research in forestand natural resource sciences.		3	E
FOR	602	Renewable Natural Resources in a global perspective	An advanced course that examines world and transboundary issues related to renewable natural resources. Students will attend a series of lectures, discuss assigned readings, and identify issues for further study. Student research papers related to those issues will be presented and discussed in a seminar format		3	E
Courses Required for Program Options (a.ka.Track(s), Concentration(s), or Speciality (if applicable)						
Course Prefix	**Course #**	**Course Title**	**Course Description**		**Credit Hours**	**Existing (E) or New (N) Course**
Total Credit hours Required for Program Track(s), Concentration(s), or Speciality (if applicable)					**0**	**NA**
GUIDED Elective Courses (i.e., Specified list of Major Program Electives that students can take AND/OR General Electives for a focused on a specific track/concentration/or speciality) (if applica						
Course Prefix	**Course #**	**Course Title**	**Course Description**		**Credit Hours**	**Existing (E) or New (N) Course**
					0	**NA**
# of Credit hours in Guided Electives (i.e., electives for a focused or track/concentration/speciality area)						
FREE Electiv	**Course #**	**Course Title**	**Course Description**		**Credit Hours**	**Existing (E) or New (N) Course**
Course Prefix						
BAE	502	Modeling of Biological Systems	The course will focus on the mathematical description and computer simulation of the complex interactions involved in biological systems.		3	E
BAE	532	Introduction to Stream Restoration	Introduction to principles of fluvial geomorphology for application in restoring impaired streams. Topics include channel formation processes (hydrology/hydraulics), stream assessment, sediment transport, in-stream structures, erosion control, habitat, and monitoring		3	E
BAE	538	GIS Applications for Water Resources	This course studies the principles, methodology and analysis of geographic information systems and spatially-referenced data unique to water resources and hydrologic modeling. Lectures will explore the latest GIS concepts, hydrologic modeling relationships and data sources and be complimented with computer-based laboratory exercises.		3	E

BAE	581	Physics of plant and animal environments	A study of the thermal, moisture, light, and gaseous components of plant and animal environments with emphasis on interactions between these biological systems and their environments		3	E
BAE	638	Groundwater Hydrology	The equations of saturated and unsaturated groundwater flow, the formulation of boundary value problems, and some analytical methods of solution. Solutions using Fourier series, solutions involving the Fourier transform and the Fourier sine and cosine transforms. The Boltzman transformation, development of the Philip solution for horizontal and vertical flow		3	E
BAE	653	Biological Processes for water quality control	Principles and applications of environmental biotechnology for water quality control. Process microbiology and kinetics for various water and wastewater treatment processes.		3	E
BAE	653	Water Quality in Surface Waters	Principles of surface water quality modeling and control. Analysis of dispersion, advection, natural aeration, biological oxidation and photosynthesis; their effects on the physical, chemical, and biological quality of waters in streams, lakes, reservoirs, estuaries and other surface waters		3	E
BAE	662	Stochastic Hydrology	Hydrologic random variables and probability distributions. Statistical measures, development and use of Monte Carlo simulations in the generation of precipitation fields. Statistical tests of hydrologic data. Point frequency and regional frequency analysis. Analysis of hydrologic time series. Long-term trend, harmonic analysis of periodicity, autocorrelation, spectral analysis		3	E
BAE	665	Water Resources System	Application of systems analysis, mathematic modeling, and optimization in water resources management and design. Solution of engineering problems found in water supply, water quality, urban drainage, and river basin development and management by use of linear, nonlinear, and dynamic programming models.		3	E
BAE	667	Stormwater Modeling	Introduction to deterministic and parametric modeling approaches for mathematically simulating stormwater runoff and quality. Emphasis on modeling concepts and model formulation. Analysis of deterministic component models and their linkage. Formulation of existing parametric models. Presentation of methods for parameter optimization and regionalization. Demonstration of linkage between the two approaches with illustrative examples.		3	E
BAE	547	Watershed Sedimentation	The course objective is to gain an understanding of watershed sedimentation including: (1) erosion and sediment transport processes in a watershed and the mechanisms by which the processes are initiated, developed, and worked towards equilibrium; (2) measurement of the sediment budget for a watershed using sediment fingerprinting and sediment loading data; and (3) prediction of sediment loading in watersheds with different human disturbances using hydrologic-based modeling tools. Specific emphasis will be placed on the use of natural carbon and nitrogen isotopic tracer measurements within sediment fingerprinting as a data-driven approach to measure sediment loading from different sources in a watershed.		3	E
BIO	530	Biogeography and Conservation	An introduction to the geographic patterning of biological diversity, exploring its origins, dynamics, and present trends. Examines the interplay among physical conditions, ecological interactions, evolutionary processes, and the historical movements of organisms and land masses as they have combined to affect the distribution of species, with particular attention to the application of biogeographic knowledge to current problems of species loss and conservation. Prereq: Two semesters of introductory biology or physical geography, or consent of the instructor		3	E
BIO	558	Insect Behavior	The principles of animal behavior will be stressed using insects as examples. Physiology mechanisms behavioral ecology and evolution of insect behavior will be covered		3	E
BIO	615	Molecular Biology	An integrative and functional approach to the regulatory aspects of DNA RNA and proteins in procaryotic and eucaryotic cells. Lectures and disucssions with readings in original literature		3	E
BIO	620	Plant Molecular Biology	This course is intended to be a treatment of current concepts of plant molecular biology.		3	E
BIO	665	Insect Ecology	Distributation and abundance of insects and insect populations		3	E
BIO	684	Phylogenetic Systematics	Theory and methods of phylogenetic analysis and cladistics will be explained. Applications of phylogenetic analysis, such as historical biogeography, biological classification, and testing of ecological hypotheses will be explored.		3	E
BIO	508	Evolution	summary of historical evolution especially of the Metazoa.		3	E
BIO	625	Insect-Plant Relationships	This course examines the natural history ecology and evolution of insect/plant relationships.		3	E
BIO	635	Insect Physiology	Study of insect physiological processes including development digestion reproduction respiration excretion hormones and immunity.		3	E
BIO	636	Insect Molecular Biology	Principles of insect molecular biology.		3	E

BST	655	Introduction to statistical genetics	BST 655 presents an introduction to the statistical methodologies used today to investigate genetic susceptibility to complex diseases. The course focuses on linkage and association analysis with applications to real-world data. Commonly used (and freely available) software will be presented and used throughout. Because the field is constantly evolving, a focus of the material for this course will be recent statistical human genetics literature.		3	E
BST	676	Biometrics II	This course, the second of a two-semester sequence in biometrics, introduces techniques for constructing and evaluating point estimators, hypothesis testing procedures, and interval estimators.		3	E
BST	681	Linear Regression	This course, the first in a two-semester sequence in regression modeling, covers linear regression models for normally distributed outcomes. The course will cover simple and multiple linear regression, estimation, interpretation, hypothesis testing, model building and diagnostics, matrix algebra for regression, and an introduction to design of experiments. The course will include the use of computing tools to apply these models to real data.		3	E
BST	682	Generalized Linear Models	This course, the second in a two-semester sequence in regression modeling, covers regression models for outcomes which are not normally distributed, such as binary and count data. The course will cover the generalized linear model framework, multivariate maximum likelihood theory, logistic regression, Poisson regression, and nominal and ordinal logistic regression models, as well as approaches for building and checking these models.		3	E
BST	701	Bayesian modeling in biostatistics	This course provides an introduction to Bayesian ideas and data analysis applied to the biosciences. The course illustrates current approaches to Bayesian modeling and computation in biostatistics.		3	E
BST	675	Biometrics I	This course, the first of a two-semester sequence in biometrics, introduces probability, discrete random variables, continuous random variables, joint distributions, and sampling distributions		3	E
EES	585	Hydrogeology	A study of the physical aspects of groundwater including regional flow well hydraulics and computer simulation.		3	E
ENT	564	Insect taxonomy	A study of insect taxonomy including the collection, preparation, and identification of adult insect specimens.		4	E
ENT	574	Advanced applied entomology	The objective of this course is to present the student with advanced concepts of applied entomology in a system-specific context.		4	E
ENT	660	Immature insects	Bionomics, structure and classification of immature stages of insects; practice in their identification.		3	E
FOR	530	Freshwater Ecology	Advanced biology and natural resources course about the ecology of freshwater environments. Course material covers 1) interactions among freshwater species and between the species and their aquatic environment, 2) how these interactions influence distribution and abundance of freshwater species, and 3) conservation and management of freshwater species and aquatic systems.		3	E
FOR	540	Urban Ecology	Discussion-based course focused on describing urban ecosystems, the processes determining patterns of abundance and distribution of organisms in urban ecosystems, the interactions among organisms in the urban environment, the interactions between humans (and societies) and nature in urban environments, and some aspects of urban planning and urban forestry as it relates to ecology and the environment.		3	E

FOR	606	Conceptural Methods in Ecology/Evolution	This course provides students with hands-on experience in a diverse array of conceptual research techniques used by ecologists and evolutionary biologists		3	E
FOR	607	Advanced Evolution	This course covers advanced topics in evolution concentrating on questions central to the understanding of general evolutionary processes		3	E
FOR	608	Behavioral Ecology and Life Histories	Examine behavior and life history phenomenon.		3	E
FOR	609	Population and Community Ecology	This course discusses the processes that determine population distributions and dynamics and community structure for both plants and animals		3	E
FOR	612	Forest Ecosystem Dynamics			3	E
FOR	622	Physiology of Plants I	A physiological/biochemical treatment of central topics in modern plant physiology.		3	E
FOR	623	Physiology of Plants II	A physiological/biochemical treatment of central topics in modern plant physiology.		3	E
FOR	630	Wildlife Habitat Analysis			3	E
FOR	662	Quantitative Methods in Renewable and Nonrenewable resource management			3	E

FOR	667	Invasive Species Biology	This course will examine circumstances that allow introduced species to become invasive how invasive species threaten our resources and approaches to minimizing the incidence and impact of invasions.	3	E
FOR	781	Special Problems in Forestry	Advanced study of selected problem areas in forestry. May be repeated for a total of six credits; any combination of FOR 781 and FOR 791 cannot exceed six credits.	1 to 3	E
FOR	791	Research in Forestry	Involves original research in selected areas of interest in forestry. May be repeated for a total of six credits; any combination of FOR 781 and FOR 791 cannot exceed six credits	1 to 3	E
FOR	510	Herpetology	This is a 4-credit, advanced biology and/or wildlife course about amphibians and reptiles for both undergraduate and graduate students. Lectures and labs follow two concurrent themes: 1) a survey of amphibians and reptiles, with special emphasis on Kentucky species, and 2) a general analysis of amphibian and reptile biology, ecology, conservation and management.	4	E
FOR	570	Landscape Ecology for Natural Resources	Principles of landscape ecology and their applications to contemporary ecological issues. Students will learn and apply the tool of geographic information system (GIS) and spatial analysis to problems in natural resource ecology, management, and conservation. Course covers the following topics: principals of landscape ecology (e.g., patch, mosaic, and scale), quantification of landscape patterns, formation and dynamics of landscape patterns, role of disturbance, landscape models and their applications.	3	E
FOR	770	Seminars in natural resources/forestry; 10 offered in last 4 semesters	Seminars include 1, Where in the world is Aldo Leopold, 2. Spatial Analysis for Natural Resources using GIS and R, 3. University Forestry Teaching, 4. Neotropical Migrant Songbird Ecology, Management and Conservation, 5. Pristine Myth, Anthropogenic Influences on New World Ecosystems, 6. Urban and Community Forestry, 7. Ecology, Conservation and Management of Wild Canids, 8. Forest Distrubance, Resilience and Health in Appalachia's Mountains, 9. Reptiles and Amphibian Conservation, 10. Wetland Ecology	1	E
GEO	531	Landscape Ecology	This course explores the field of landscape ecology – the causes, development, importance of ecological processes, and the interactions of dynamic processes ov	3	E
GEO	600	Introduction to methods in geography	A broad survey of methods and methodological debates of research in human/physical geography. Emphasis on contemporary research examples. P	3	E
GEO	609	GIScience fundamentals	This course introduces students to the use of geographic information systems and the science behind their use. Topics include an introduction to types of geographic information and data; the sources, constraints, and uses of data; the techniques for processing and visualizing spatial data and the methodological, epistemological and ontological issues associated with GIScience	3	E
GEO	610	analystical methods in geography	An introduction to the application of analytical methods to geographic problem solving. Topics cover sampling theory, probability theory and both parametric and nonparametric statistical techniques.	3	E
GEO	619	remote sensing fundamentals	This course covers the use of remote sensing technologies and their application in natural resource management, land use/land cover analysis, city and regional planning and environmental monitoring. This course covers the basic remote sensing principles, the	3	E
LA	556	Contemporary geospatial applications for land	Advance concepts in data base analysis, model development, and ancillary functions in geographic information systems. Lecture, two hours; laboratory, four hours per week	3	E
PLS	514	Grass taxonomy and identification	Overview of the grass family, concentrating on taxonomic issues and identification skills for ~200 species	3	E
PLS	566	soil microbiology	The nature and biochemical activities of soil microflora; their significance in soil genesis and structure and their role in soil fertility	3	E
PLS	567	Methods in soil microbiology	Methods in Soil Microbiology will be a laboratory course dedicated to introducing upper division students to the methods and techniques used by microbiologists and other soil scientists to examine organisms, interactions, and processes in soil systems.	1	E
PLS	573	soil morphology and classification	Study of concepts of soil horizons, soil profiles and soilscapes; morphological, physical, chemical and mineralogical parameters useful in their characterization.	3	E
PLS	650	soil-plant relationships	An advanced course on the relationships between media and the root systems of plants growing therein.	3	E
PLS	655	Spatial and temporal statistics	Opportunities for spatial and temporal monitoring strategies, the diagnosis and analysis of spatial and temporal agricultural and ecosystem processes are taught.	3	E
PLS	660	Advanced soil biology	A critical evaluation of the current research status in selected aspects of soil biology	2	E
PLS	450G	Biogeochemistry	A lecture and lab course emphasizing the role of microbial processes on elemental and pollutant cycling in terrestrial soils and aquatic sediments	3	E
PLS	455G	wetland delineation	Basic concepts of natural wetland ecosystems, their importance, functions, and major features used for their identification and classification.	3	E
PLS	456G	constructed wetlands	Important aspects of the functions of natural and constructed wetlands as water purifiers.	3	E

UNIVERSITY OF KENTUCKY PROGRAM ASSESSMENT PLAN
Ph.D. (Forest and Natural Resource Sciences) Degree Program

1. Introduction

Unit Mission Statement:

Research, teaching, and extension programs of the Department of Forestry and Natural Resources will effectively enhance sustainable economic, ecological, and social benefits of forests and related natural resources in Kentucky and beyond. Our programs will elevate the quality of life by:

- enhancing the integrity, stability, and health of forests and related biotic communities; and
- increasing the long-term value added, sustainable income, and sustainable flow of services from forests and natural resources.

The Ph.D. (Forest and Natural Resource Sciences, FNRS) degree program is focused and structured to prepare graduates for success in achieving the Department's overall mission of enhancing the sustainable economic, ecological, and social benefits of forests and related natural resources. Our goal is to produce high quality scientists, who will contribute to natural resource disciplines through high impact research, education and extension.

Basic Assessment Approach:

There are four program-level student learning outcomes. All outcomes are assessed within a four year cycle, using direct methods. Details are below.

2. Assessment Oversight, Resources

The learning outcomes assessment coordinator for the College of Agriculture, Food and Environment is the College's Associate Dean for Instruction, Dr. Larry Grabau. The current M.S. (FNRS) degree program's learning outcomes assessment coordinators are Drs. Laura Lhotka, FNRS Academic Coordinator, and Steven Price, Associate Professor and Director of Graduate Studies of the Forest and Natural Resource Sciences Graduate Program. It is the M.S. assessment coordinators' responsibility to lead and monitor the program's assessment activities, to analyze annual assessment data, to lead the faculty discussion of assessment results each spring, and to write and submit the assessment report due annually to the university on 31 October.

3. Program-Level Learning Objectives

Outcome #1: Students will be able to describe the foundation of critical concepts in natural resource sciences, management and policy.

Outcome #2: Students will be able to find, synthesize, and evaluate conclusions and evidence reported in a variety of sources and place their own academic work into the context of both seminal and contemporary scientific literature.

Outcome #3: Students will be able to demonstrate the ability to communicate information effectively in oral/visual presentations and in writing.

Outcome #4: Students will be able to employ appropriate methods to generate new knowledge as shown through proposal development (i.e., hypothesis generation, novel analytical techniques) and publications based on original research findings.

4. Curriculum Map

I = introduce, R = reinforce, E = emphasize, EC = early academic career assessment, LC = late academic career assessment

Course or Activity	**SLO 1**	**SLO 2**	**SLO 3**	**SLO 4**
FOR 601	I, R	I, R	I, R	I, R
FOR 602	R, E	R, E	R, E	R
FOR 603	R, E	R, E	R, E	R
FOR 770	R, E	R, E	R, E	R
Qualifying Exam	EC	EC	EC	EC
Exit Seminar, Final Examination, and Dissertation	LC	LC	LC	LC

5. Assessment Methods and Measures (Direct Methods Only)

- Outcome #1: Students will be able to describe the foundation of critical concepts in forest and natural resource sciences, management and policy. Outcome #1 will be introduced,reinforced and emphasized through written work and presentation in required coursework (i.e.,FOR 601, FOR 602,FOR 603, and FOR 770). In particular, FOR 603 instructors indirectly assess students abilities to describe the foundation of critical concepts. Direct assessment will occur, via rubric completed by student's advisory committee, during qualifying exam and final exam stages. (rubric attached - see Appendix)

- Outcome #2: Students will be able to find, synthesize, and evaluate conclusions and evidence reported in a variety of sources and place their own academic work into the context of both seminal and contemporary scientific literature. Outcome #2 will be introduced, reinforced, emphasized and indirectly assessed through written work and presentation in required coursework. Direct assessment will occur during qualifying exam and final exam stages. (rubric attached - see Appendix)

- Outcome #3: Students will be able to demonstrate the ability to communicate information effectively in oral/visual presentations and in writing for natural resource sciences. Outcome #3 will be reinforced, emphasized, and indirectly assessed through written work and presentation in required coursework. FOR 601 will introduce these

communication skills to students. Direct assessment will occur during qualifying exam and final exam stages. (rubric attached - see Appendix)

- Outcome #4: Students will be able to employ appropriate methods to generate new knowledge as shown through proposal development (i.e., hypothesis generation, novel analytical techniques) and publications based on original research findings. Outcome #4 will be introduced, reinforced, emphasized and indirectly assessed through required coursework, particularly in FOR 601. Direct assessment will occur during qualifying exam and/or final exam stages. (rubric attached - see Appendix)

6. Data Collection

Year of Assessment Cycle	Outcome Assessed	Data	Benchmark
Year 2, 4	Outcome 1 (Defining Science)	See rubric (in Appendix)	Median performance of late-academic-career students will be at least "Accomplished" (see rubric in Appendix)
Year 2, 4	Outcome 2 (Conclusions and Evidence from Literature)	See rubric (in Appendix)	Median performance of late-academic-career students will be at least "Accomplished" (see rubric in Appendix)
Year 2, 4	Outcome 3 (Communication of Information)	See rubric (in Appendix)	Median performance of late-academic-career students will be at least "Accomplished" (see rubric in Appendix)
Year 2, 4	Outcome 4 (Generation of New Knowledge)	See rubric (in Appendix)	Median performance of late-academic-career students will be at least "Accomplished" (see rubric in Appendix)

7. Assessment Cycle and Data Analysis

Assessment Cycle:

Assessment of student learning objectives will take place during two time periods that follow a four year cycle, with all outcomes assessed during the qualifying exam and final exam stages (i.e., in year 2 and 4), but on an annual basis from the perspective of the program.

Data Analysis Process/Procedures:

Assessment of course-level student learning takes place in all courses. For each program-level student learning outcome, assessment data will be gathered at two points in the curriculum. The first point will be during to qualifying exams. The second point will occur

closer to graduation, during the time when students are giving exit seminars and dissertation defenses. For details, please refer to the rubrics in the Appendix.

Because the qualifying examination and the final examination are required by the degree program, each assessment will be based on a complete census of the student cohort being assessed, except for students who fail to reach the stage of scheduling a final examination.

After the completion of an academic year's program-level assessments, the Ph.D. (FNRS) assessment coordinator will compile and analyze the data. Key features of the analyses will address whether or not (a) benchmarks were achieved, and (b) "late-academic-career" students outperformed "early-academic- career" students. As mentioned above, the results will be shared with all faculty members of the Department of Forestry and Natural Resources prior to the final meeting of each academic year. Decisions regarding programmatic improvement actions will be made at that meeting by consensus, based on discussion of the year's assessment data analyses and conclusions.

Data Analysis Report Process/Procedures:

The Ph.D. (FNRS) assessment coordinator will prepare a program-level assessment report each year, in accordance with consensus decisions of the faculty (see preceding paragraph). The report will be made available to all Department of Forestry and Natural Resources faculty members for review prior to its submission by the assessment coordinator to the university's assessment office (due no later than 31 October). Whenever a periodic internal or external review of the Department of Forestry and Natural Resources is conducted or Departmental strategic planning occurs, information from the annual assessment reports of relevant prior years will be incorporated appropriately into the review or planning.

8. Teaching Effectiveness

All courses with adequate enrollment for the TCE process are evaluated by students each semester. Also, each faculty member includes a teaching portfolio whenever submitting periodic merit-review documents. The Department Chair with an ad hoc faculty committee reviews the merit-review documents, and then the Chair provides each instructor and graduate student advisor with suggestions for improvement of teaching and mentoring during annual or semi-annual performance review.

9. What are the plans to evaluate students' post-graduate success?

Department of Forestry and Natural Resources has an active advisory board, which meets annually to offer external perceptions of program success. These perceptions include the competencies of our graduates. In addition, we conduct surveys with both graduates and employers of graduates, including those employers both within and outside of academia. The surveys will focus on the students' perceived success, salaries and professional career paths as well as include the employer's perspective of the employee during the beginning of their career. Surveys of students completing the degree requirements will occur annually. Surveys of employees will occur periodically (every 3-5 years).

10. Appendix – Rubrics

For each of the four program-level learning outcomes, the rubric we will use is in the following Appendix. The rubrics indicate, in addition to the competencies associated with each level of performance, the activities used for assessment, and the faculty members responsible for evaluating students (*i.e.* the major professors of students who schedule a qualifying and final examination). These rubrics are always subject to potential refinement as a result of annual faculty discussion of our assessment process and results.

Forestry and Natural Resources Department – PhD FOR Degree Program
Scoring Rubric for Learning Outcome 1: Defining Science

_____ Early-Academic-Career Assessment: Qualifying Exam
_____ Late -Academic-Career Assessment: Final Exam

Student:_____ Semester/Year:_____

Student Learning Outcome or Objective	**1**	**2**	**3**	**4**	**Score**
Learning Outcome 1: Students will be able to describe the foundation of critical concepts in natural resource sciences, management and policy.	Understands science as a tool of inquiry.	Understands the steps in the scientific method.	Can determine whether research findings have been generated by the scientific methods. Can form testable hypotheses.	Can evaluate the scientific rigor of a specific project in the dissertation or in other student writing or speaking.	

Comments:

Evaluator(s):_____ Date:_____

Forestry and Natural Resources Department – PhD FOR Degree Program
Scoring Rubric for Learning Outcome 2: Evaluating and Synthesizing Science

_____ Early-Academic-Career Assessment: Qualifying Exam
_____ Late -Academic-Career Assessment: Final Exam

Student:_____ Semester/Year:_____

Student Learning Outcome or Objective	**1**	**2**	**3**	**4**	**Score**
<u>Learning Outcome 2:</u> Students will be able to find, synthesize, and evaluate conclusions and evidence reported in a variety of sources and place their own academic work into the context of both seminal and contemporary scientific literature.	Can find and extract pertinent information and conclusions from research sources.	Can synthesize and evaluate research findings and draw conclusions based on available literature.	Can develop novel lines of inquiry based on questions raised in previously presented evidence and identify context of their own academic work in literature.	Has submitted a manuscript for a peer reviewed paper or has submitted a grant proposal to a competitive grant program.	

Comments:

Evaluator(s):_____ Date:_____

Forestry and Natural Resources Department – PhD FOR Degree Program
Scoring Rubric for Learning Outcome 3: Communication

_____ Early-Academic-Career Assessment: Qualifying Exam
_____ Late -Academic-Career Assessment: Final Exam

Student:_____ Semester/Year:_____

Student Learning Outcome or Objective	**1**	**2**	**3**	**4**	**Score**
Learning Outcome 3: Students will be able to demonstrate the ability to communicate information effectively					
a. in oral/visual presentations.	No more than two of the following presentation components are adequate: • delivery • structure/ • organization • information content	Three of the following presentation components are adequate: delivery structure/organization visual aids information content	All four of the following presentation components are adequate: delivery structure/organization visual aids information content	Received regional or national award for oral presentation or poster presentation.	
b. in writing.	Submitted a research proposal containing all fundamental elements	Submitted to major professor disseration draft that includes all required components	Final dissertation accepted by major professor and other committee members as a result of final examination	Submitted manuscript, based on dissertation work, for peer- reviewed paper	

Comments:

Evaluator(s):_____ Date:_____

Forestry and Natural Resources Department – PhD FOR Degree Program
Scoring Rubric for Learning Outcome 4: Generate New Knowledge

_____ Early-Academic-Career Assessment: Qualifying Exam
_____ Late -Academic-Career Assessment: Final Exam

Student:_____ Semester/Year:_____

Student Learning Outcome or Objective	**1**	**2**	**3**	**4**	**Score**
Learning Outcome 4: Students will be able to employ appropriate methods to generate new knowledge.	Identifies a strategy for addressing a natural resource/ forestry topic with a science-based approach.	Submits acceptable research proposal.	Submits final draft of an acceptable dissertation.	Has published an article or submitted a manuscript for publication, based on original research findings.	

Comments:

Evaluator(s):_____ Date:_____

University of Kentucky

Schroeder, Margaret <mmohr2@g.uky.edu>

Fw: PSS - Course Use Request - FNR PhD Program

Price, Steven <steven.price@uky.edu> Thu, Mar 15, 2018 at 10:44 AM
To: "Schroeder, Margaret" <mmohr2@g.uky.edu>

Hi Margaret,

Below (and attached) is the response from PSS regarding borrowed coursework.
Thanks

Steven J. Price, Ph.D.

Associate Professor of Stream and Riparian Ecology

Director of Graduate Studies (Forest and Natural Resource Sciences)

Department of Forestry and Natural Resources

University of Kentucky

Home page: https://forestry.ca.uky.edu/steven-price

Lab page: http://pricelab.ca.uky.edu/

Graduate Program in Forest and Natural Resource Sciences: https://forestry.ca.uky.edu/forestry-graduate-program

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From: Stringer, Jeffrey
Sent: Wednesday, March 14, 2018 2:03 PM
To: Price, Steven
Subject: FW: PSS - Course Use Request - FNR PhD Program

Steve, I assume the PSS response from McCulley will work.

From: McCulley, Rebecca
Sent: Wednesday, March 14, 2018 2:02 PM
To: Stringer, Jeffrey

Cc: Price, Steven
Subject: RE: PSS - Course Use Request - FNR PhD Program

Hi Jeff –

As per your request, I emailed Plant & Soil Sciences faculty on March 2, 2018 (see attached) regarding whether they were in favor or opposed to allowing Forestry & Natural Resource PhD students into the classes listed. I asked that they respond to me by Friday, March 9, and that I would interpret no response as approval. I heard back from zero of the ~50 faculty that the AGRFAC listserv goes out to. Therefore, it appears that you have our support for your PhD students to take our courses. Please let me know if you need more information.

Sincerely,
Rebecca McCulley

****

Rebecca L. McCulley

Chair, Plant & Soil Sciences

106 Plant Science Building

1405 Veterans Drive

University of Kentucky

Lexington, KY 40546-0312

(o) 859 257 6388

(c) 859 533 2630

www.mcculleylab.org

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From: Stringer, Jeffrey
Sent: Friday, March 2, 2018 8:09 AM
To: McCulley, Rebecca <rebecca.mcculley@uky.edu>

Cc: Price, Steven <steven.price@uky.edu>
Subject: PSS - Course Use Request - FNR PhD Program

EMemo

To: Plant and Soil Science / Dr. Rebecca McCulley

From: Dr. Jeff Stringer

Subject: Formal Request for Course Use in Proposed Forestry and Natural Resource PhD Program

As I believe you are aware, the Department of Forestry and Natural Resources (FNR) is in the process of proposing a new doctoral program in Forest and Natural Resource Sciences. Currently, a doctoral program in forestry, natural resources, and related applied ecological disciplines is not offered at any university in Commonwealth. Our program will offer PhD students an individualized yet comprehensive program in management and conservation of natural resources and the environment, which will include substantial scientific investigations in topics cumulating in a defense of a dissertation. Coursework will vary depending on students' research areas and deficiencies (as determined by their advisory committee). We anticipate bringing in 2-3 students per year. I'm writing to ask for permission to use multiple courses offered by your unit (listed below). Given the relatively small numbers of students we anticipate annually and the individualized nature of our proposed program, we do not think that the number of students will overwhelm any single course. Note that our Master's students (M.S. Degree in Forest and Natural Resource Sciences) often enroll in the courses listed below.

Courses

PLS 450G

PLS 455G

PLS 456G

PLS 468G

PLS 470G

PLS 514

PLS 566

PLS 567

PLS 573

PLS 650

PLS 655

PLS 660

Would you be willing to ask your unit faculty if they would approve the use of the course(s) listed above for the proposed doctoral program in Forest and Natural Resource Sciences? The University Senate requires us to submit verification of approval by the unit faculty in the letter of support. The Senate will accept an email that describes a consultative process conducted via email, such as giving departmental faculty the information via email and giving them five or six days to respond with objections or comments.

I believe Steve Price our DGS and Mark have been in contact with one another regarding this request and I believe that Steve has provided answers to some questions that Mark had. If there are further questions please let us know. Please contact either of us if needed and thanks in advance for attention to this request.

Jeffrey W. Stringer, Ph.D.

Chair, Department of Forestry and Natural Resources

Professor Hardwood Silviculture and Forest Operations

Department of Forestry

T.P. Cooper Bldg

University of Kentucky

Lexington, KY 40546-0073

859-257-5994

www.ukforestry.org www.masterlogger.org www.certifiedmasterlogger.com
www.forestcertificationcenter.org

---------- Forwarded message ----------
From: "McCulley, Rebecca" <rebecca.mcculley@uky.edu>
To: "Plant & Soil Science Faculty" <AGRFAC@lsv.uky.edu>
Cc:
Bcc:
Date: Fri, 2 Mar 2018 17:27:23 +0000
Subject: FW: PSS - Course Use Request - FNR PhD Program

Related to the email from Mark earlier today, regarding Forestry's new PhD program, they are seeking approval from us for this new program's students to take the following courses. If anyone has a problem with <5 Forestry and Natural

Resources PhD students per year taking the following courses, let me know before next Friday (Mar 9). If I hear nothing, I will assume we are okay with it and send them the requested letter of approval.

Thanks,
Rebecca

From: Stringer, Jeffrey
Sent: Friday, March 2, 2018 8:09 AM
To: McCulley, Rebecca <rebecca.mcculley@uky.edu>
Cc: Price, Steven <steven.price@uky.edu>
Subject: PSS - Course Use Request - FNR PhD Program

EMemo

To: Plant and Soil Science / Dr. Rebecca McCulley

From: Dr. Jeff Stringer

Subject: Formal Request for Course Use in Proposed Forestry and Natural Resource PhD Program

As I believe you are aware, the Department of Forestry and Natural Resources (FNR) is in the process of proposing a new doctoral program in Forest and Natural Resource Sciences. Currently, a doctoral program in forestry, natural resources, and related applied ecological disciplines is not offered at any university in Commonwealth. Our program will offer PhD students an individualized yet comprehensive program in management and conservation of natural resources and the environment, which will include substantial scientific investigations in topics cumulating in a defense of a dissertation. Coursework will vary depending on students' research areas and deficiencies (as determined by their advisory committee). We anticipate bringing in 2-3 students per year. I'm writing to ask for permission to use multiple courses offered by your unit (listed below). Given the relatively small numbers of students we anticipate annually and the individualized nature of our proposed program, we do not think that the number of students will overwhelm any single course. Note that our Master's students (M.S. Degree in Forest and Natural Resource Sciences) often enroll in the courses listed below.

Courses

PLS 450G

PLS 455G

PLS 456G

PLS 468G

PLS 470G

PLS 514

PLS 566

PLS 567

PLS 573

PLS 650

PLS 655

PLS 660

Would you be willing to ask your unit faculty if they would approve the use of the course(s) listed above for the proposed doctoral program in Forest and Natural Resource Sciences? The University Senate requires us to submit verification of approval by the unit faculty in the letter of support. The Senate will accept an email that describes a consultative process conducted via email, such as giving departmental faculty the information via email and giving them five or six days to respond with objections or comments.

I believe Steve Price our DGS and Mark have been in contact with one another regarding this request and I believe that Steve has provided answers to some questions that Mark had. If there are further questions please let us know. Please contact either of us if needed and thanks in advance for attention to this request.

Jeffrey W. Stringer, Ph.D.

Chair, Department of Forestry and Natural Resources

Professor Hardwood Silviculture and Forest Operations

Department of Forestry

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Lexington, KY 40546-0073

859-257-5994

www.ukforestry.org www.masterlogger.org www.certifiedmasterlogger.com www.forestcertificationcenter.org

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noname.eml
13K

University of Kentucky

Schroeder, Margaret <mmohr2@g.uky.edu>

Fw: CE- Forestry and Natural Resources PhD request

Price, Steven <steven.price@uky.edu> Thu, Mar 15, 2018 at 10:43 AM
To: "Schroeder, Margaret" <m.mohr@uky.edu>

Hi Margaret,

The Biosystems and Agricultural Engineering chair requested that we run our course request through Civil Engineering due to cross-listed courses. Below is the response from Civil Engineering.

Steven J. Price, Ph.D.

Associate Professor of Stream and Riparian Ecology

Director of Graduate Studies (Forest and Natural Resource Sciences)

Department of Forestry and Natural Resources

University of Kentucky

Home page: https://forestry.ca.uky.edu/steven-price

Lab page: http://pricelab.ca.uky.edu/

Graduate Program in Forest and Natural Resource Sciences: https://forestry.ca.uky.edu/forestry-graduate-program

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From: Souleyrette, Reginald
Sent: Wednesday, March 14, 2018 9:10 PM
To: Price, Steven
Cc: Stringer, Jeffrey; Ormsbee, Lindell; Jimmy Fox (jffox@engr.uky.edu); Wang, Yi-Tin
Subject: RE: CE- Forestry and Natural Resources PhD request

Dear Steven,

I have polled our faculty, and received three positive responses. I can't guarantee the frequency at which these courses may be offered, but based on the response, I am approving your listing of these courses in your new program.

I include the following feedback, should it be useful to you going forward:

"For CE 547, we will welcome (approve) the forestry students to take the class. A number of their MS students have taken the class previously."

"I would think they would want CE664" (See below)

“I had graduate students from forestry in my CE 653 class before. They may not have sufficient math background to comprehend some of the topics but I can teach them”

No comments about CE 665 or CE 667.

I also include course descriptions for your reference, below:

CE 547 Watershed Sedimentation (3, F)

The course objective is to gain an understanding of watershed sedimentation including: (1) erosion and sediment transport processes in a watershed and the mechanisms by which the processes are initiated, developed, and worked towards equilibrium; (2) measurement of the sediment budget for a watershed using sediment fingerprinting and sediment loading data; and (3) prediction of sediment loading in watersheds with different human disturbances using hydrologic-based modeling tools. Specific emphasis will be placed on the use of natural carbon and nitrogen isotopic tracer measurements within sediment fingerprinting as a data-driven approach to measure sediment loading from different sources in a watershed. In order to fulfill the course objective, the instructor will use traditional classroom learning as well as field and laboratory components of the course in order that students can participate in hands-on learning. Prereq: CE 461G (Pre- or Co-requisite or equivalent). (Same as BAE 547)

CE 653 Water Quality in Surface Waters (3, Sp., Even year)

Principles of surface water quality modeling and control. Analysis of dispersion, advection, natural aeration, biological oxidation and photosynthesis; their effects on the physical, chemical, and biological quality of waters in streams, lakes, reservoirs, estuaries and other surface waters. Prereq: CE 351, or consent of instructor (Same as BAE 653).

CE 664 Watershed Management (3, Sp., Even year)

This course provides an overview of the scientific principles and management strategies used to effectively manage the physical, chemical, biological and social resources within a watershed so as to improve and sustain the integrity of the watershed system. The course will examine watershed management from both a scientific/engineering perspective as well as from a social science/policy perspective. Examples of effective watershed management will be drawn from cases studies in Kentucky and the United States. Students will be provided with an introduction to those

spatial data sets, computer software, and methods currently used in watershed management practice. Pre-req: BAE437 or CE461G or an equivalent course in hydrology, or consent of instructor.

CE 665 Water Resources Systems (3, Sp., Odd year)

Application of systems analysis, mathematic modeling, and optimization in water resources management and design. Solution of engineering problems found in water supply, water quality, urban drainage, and river basin development and management by use of linear, non-linear, and dynamic programming models. Prereq. or concur: CE 421 and CE 569 or consent of instructor same as BAE 665).

CE 667 Stormwater Modeling (3, Occasionally)

Introduction to deterministic and parametric modeling approaches for mathematically simulating stormwater runoff and quality. Emphasis on modeling concepts and model formulation. Analysis of deterministic component models and their

linkage. Formulation of existing parametric models. Presentation of methods for parameter optimization and regionalization. Demonstration of linkage between the two approaches with illustrative examples. Prereq: CE 341 and CE 461G, or consent of instructor (same as BAE 667).

Please let us know if you need anything else form us at this time,

Reg

Reginald R. Souleyrette, PhD, PE

Commonwealth Professor and Chair

Department of Civil Engineering

Planning and Decision Analytics

Kentucky Transportation Center

University of Kentucky

859-257-5309 (office) 515-231-7264 (mobile)

From: Price, Steven
Sent: Friday, March 9, 2018 1:52 PM
To: Souleyrette, Reginald <souleyrette@uky.edu>
Cc: Stringer, Jeffrey <jeffrey.stringer@uky.edu>
Subject: CE- Forestry and Natural Resources PhD request

EMemo

To: CE / Dr. Reg Souleyrette

From: Dr. Steven Price (DGS FNR) and Dr. Jeff Stringer (chair FNR)

Subject: Formal Request for Course Use in Proposed FNR PhD Program

The Department of Forestry and Natural Resources (FNR) is in the process of proposing a new doctoral program in Forest and Natural Resource Sciences. Our program will offer PhD students an individualized yet comprehensive program in forestry, management and conservation of natural resources and the environment, which will include substantial scientific investigations in topics resulting in a defense of a dissertation. Coursework will vary depending on students' research areas and deficiencies (as determined by their advisory committee). We anticipate bringing in 2-3 students per year. I'm writing to ask for permission to use multiple courses offered by your unit (listed below). Note that we have been in contact with Biosystems and Agricultural Engineering, and they requested we contact your department as many BAE courses are cross-listed with CE. Given the relatively small numbers of students we anticipate annually and the individualized nature of our proposed program, we do not think that the number of students will overwhelm any single

course.

Courses

CE 547

CE 653

CE 665

CE 667

Would you be willing to ask your unit faculty if they would approve the use of the course(s) listed above for the proposed doctoral program in Forest and Natural Resource Sciences? The University Senate requires departments to submit verification of approval by the unit faculty. The Senate will accept an email that describes a consultative process conducted via email, such as giving departmental faculty the information via email and giving them five or six days to respond with objections or comments.

If there are specific questions please let me know. Thanks in advance your attention to this request.

Steven J. Price, Ph.D.

Associate Professor of Stream and Riparian Ecology

Director of Graduate Studies (Forest and Natural Resource Sciences)

Department of Forestry and Natural Resources

University of Kentucky

Home page: https://forestry.ca.uky.edu/steven-price

Lab page: http://pricelab.ca.uky.edu/

Graduate Program in Forest and Natural Resource Sciences: https://forestry.ca.uky.edu/forestry-graduate-program

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University of Kentucky

Schroeder, Margaret <mmohr2@g.uky.edu>

Fw: EES - Course Use Request - Department of Forestry and Natural Resources PhD Program

Price, Steven <steven.price@uky.edu> Thu, Mar 15, 2018 at 10:48 AM
To: "Schroeder, Margaret" <m.mohr@uky.edu>

Margaret,

Below is the response from EES. Thanks

Steven J. Price, Ph.D.

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From: Moecher, David
Sent: Tuesday, March 13, 2018 6:23 AM
To: Stringer, Jeffrey
Cc: Price, Steven
Subject: Re: EES - Course Use Request - Department of Forestry and Natural Resources PhD Program

Dear Jeff,

The faculty in EES support the proposal to include EES 585 in the curriculum for the new Ph.D. program in Forestry and Natural Resources. As you state this course is already taken by M.S. candidates in your program and there is sufficient room for more enrollees.

Good luck with your program.

Dave Moecher, Alumni Professor and Chair
University of Kentucky
Dept. Earth & Env. Sci.
Lexington KY 40506-0053
(off.) 859-257-6939
(cell) 859-492-6749
ees.as.uky.edu/users/moker

From: Stringer, Jeffrey
Sent: Friday, March 2, 2018 7:48:41 AM
To: Moecher, David
Cc: Price, Steven
Subject: EES - Course Use Request - Department of Forestry and Natural Resources PhD Program

EMemo

To: Earth and Environmental Science / Dr. David Moecher

From: Dr. Jeff Stringer

Subject: Formal Request for Course Use in Proposed Forestry and Natural Resource PhD Program

The College of Agriculture, Food and Environment/Department of Forestry and Natural Resources is in the process of proposing a new doctoral program in Forest and Natural Resource Sciences. Currently, a doctoral program in forestry, natural resources, and related applied ecological disciplines is not offered at any university in Commonwealth. Our program will offer PhD students an individualized yet comprehensive program in management and conservation of natural resources and the environment, which will include substantial scientific investigations in topics cumulating in a defense of a dissertation. Coursework will vary depending on students' research areas and deficiencies (as determined by their advisory committee). We anticipate bringing in 2-3 students per year. I'm writing to ask for permission to use EES 585. Given the relatively small numbers of students we anticipate annually and the individualized nature of our proposed program, we do not think that the number of students will overwhelm any single course. Note that our Master's students (M.S. Degree in Forest and Natural Resource Sciences) have enrolled in EES 585 in past semesters.

Would you be willing to ask your unit faculty if they would approve the use of the course listed above for the proposed doctoral program in Forest and Natural Resource Sciences? The University Senate requires us to submit verification of approval by the unit faculty in the letter of support. The Senate will accept an email that describes a consultative process conducted via email, such as giving departmental faculty the information via email and giving them five or six days to respond with objections or comments.

If there are specific questions please let us know. Steve Price is our DGS that is handling the process and he can address, in a timely manner, any questions that arise. Please contact either of us if needed and thanks in advance for your attention to this request.

Jeffrey W. Stringer, Ph.D.

Chair, Department of Forestry and Natural Resources

Professor Hardwood Silviculture and Forest Operations

Department of Forestry

T.P. Cooper Bldg

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Lexington, KY 40546-0073

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University of Kentucky
College of Public Health
Department of Biostatistics

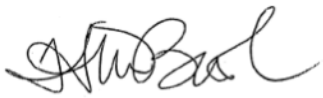
725 Rose Street
301 M-D Science Building
Lexington, KY 40536
P: 859-218-2080
www.uky.edu

To: Department of Forestry and Natural Resources Chair and DGS (J. Stringer and S. Price)
From: Heather M Bush, Interim Chair
Subject: Course approval for Forest and Natural Resource PhD program

Faculty in the Department of Biostatistics, College of Public Health, were consulted regarding the request by the Department of Forestry and Natural Resources to use the courses listed below to satisfy requirements associated with the proposed PhD in Forest and Natural Resource Sciences degree.

Course list: BST 655 (offered every other year) and BST 682 (offered every year)

The consult indicated that the faculty approved the use of the listed courses. We understand that typically there will only be a few students per year that will enroll in one or more of the listed courses and we anticipate space available for them to do so.



University of Kentucky

Schroeder, Margaret <mmohr2@g.uky.edu>

Fw: Entomology - Course Use Request - FNR PhD Program

Price, Steven <steven.price@uky.edu> Fri, Mar 9, 2018 at 2:07 PM
To: "Schroeder, Margaret" <mmohr2@g.uky.edu>
Cc: "Stringer, Jeffrey" <jeffrey.stringer@uky.edu>

See approval email below. Thanks

Steven J. Price, Ph.D.

Associate Professor of Stream and Riparian Ecology

Director of Graduate Studies (Forest and Natural Resource Sciences)

Department of Forestry and Natural Resources

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From: Palli, Subba
Sent: Wednesday, March 7, 2018 4:03 PM
To: Price, Steven; Stringer, Jeffrey
Cc: Rieske-Kinney, Lynne
Subject: RE: Entomology - Course Use Request - FNR PhD Program

Dr. Price,

I polled instructors of ENT 502, ENT 561, ENT 564, ENT 568, ENT 574, ENT 635, ENT 660, ENT 665, ENT 667 and ENT 680 courses and they all approved including these courses in FNR Ph.D. program. I also approve including these courses in FNR Ph.D. program.

Good luck with your application,

Reddy

Subba Reddy Palli

University Research Professor and Chair

Department of Entomology

College of Agriculture, Food, and Environment

S225 Ag. Science N. University of Kentucky

Lexington, KY 40546

Phone: 859 257 4962 Fax: 859 323 1120

From: Price, Steven
Sent: Wednesday, March 07, 2018 12:56 PM
To: Palli, Subba <rpalli@uky.edu>; Stringer, Jeffrey <jeffrey.stringer@uky.edu>
Cc: Rieske-Kinney, Lynne <lynne.rieske-kinney@uky.edu>
Subject: Re: Entomology - Course Use Request - FNR PhD Program

Hi Reddy,

Thanks for the email. Sheila Brothers (Office of Senate Council) recommends "the email should be clear that the faculty were consulted and the "okay to use" is the message from the unit faculty." Thus, would you mind revising the email to state that the faculty are okay with these courses being used.

Thanks again!

Steven J. Price, Ph.D.

Associate Professor of Stream and Riparian Ecology

Director of Graduate Studies (Forest and Natural Resource Sciences)

Department of Forestry and Natural Resources

University of Kentucky

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From: Palli, Subba
Sent: Tuesday, March 6, 2018 4:42:46 PM
To: Price, Steven; Stringer, Jeffrey
Cc: Rieske-Kinney, Lynne
Subject: RE: Entomology - Course Use Request - FNR PhD Program

Jeff and Steve,

I provided email similar to this for including Entomology courses in Biology programs. Please let me know if this is sufficient.

Dr. Price,

I support including ENT 502, ENT 561, ENT 564, ENT 568, ENT 574, ENT 635, ENT 660, ENT 665, ENT 667 and ENT 681 in FNR Ph.D. program.

Good luck with your application,

Reddy

Subba Reddy Palli

University Research Professor and Chair

Department of Entomology

College of Agriculture, Food and Environment

S225 Ag. Science N. University of Kentucky

Lexington, KY 40546

Phone: 859 257 4962 Fax: 859 323 1120

From: Price, Steven
Sent: Monday, March 05, 2018 8:59 PM
To: Stringer, Jeffrey <jeffrey.stringer@uky.edu>; Palli, Subba <rpalli@uky.edu>; Rieske-Kinney, Lynne <lynne.rieske-kinney@uky.edu>
Subject: Re: Entomology - Course Use Request - FNR PhD Program

Reddy and Lynne:

Thanks for the response. Lynne - most the courses (except 681) you listed are cross-listed with Biology. I did request their "use" through Biology; I did not intend to leave them out. I now realize

I should have also requested their use through Entomology as well. Sorry about that!

The updated list would include ENT 561, ENT 564, ENT 568, ENT 574, ENT 635, ENT 660, ENT 665, and ENT 681.

Thanks again for considering our request.

Steven J. Price, Ph.D.

Associate Professor of Stream and Riparian Ecology

Director of Graduate Studies (Forest and Natural Resource Sciences)

Department of Forestry and Natural Resources

University of Kentucky

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From: Stringer, Jeffrey
Sent: Monday, March 5, 2018 4:16:16 PM
To: Palli, Subba; Rieske-Kinney, Lynne
Cc: Price, Steven
Subject: RE: Entomology - Course Use Request - FNR PhD Program

Reddy and Lynne, I will let Steve respond to specific questions on courses. I will clarify Lynn's question on use. Use means that students in the PhD program can get credit for those courses in the program. While students can enroll in those courses now, we are required to ask permission from the host unit to allow listing of their courses for "use" in fulfilling requirements. Cross listing is not required. As indicated Steve will respond to the other questions. The University requires a written (email is fine) response from host departments, indicating department faculty approval, for the listing of the courses. Jeff

From: Palli, Subba
Sent: Monday, March 05, 2018 3:17 PM
To: Stringer, Jeffrey
Subject: FW: Entomology - Course Use Request - FNR PhD Program

Hi Jeff,

Please see an email from Lynne copied below. Could you or Dr. Price respond to these comments? I am happy to support enrolment of FNR students in Entomology courses. Some of the Entomology courses are cross-listed with Forestry department. Do we need to include them in the permission memo from us? As Lynne suggests, there are other Entomology courses that may be useful to your students. Do you want to include them in your curriculum?

Thanks,

Reddy

From: Rieske-Kinney, Lynne
Sent: Monday, March 05, 2018 2:51 PM
To: Palli, Subba <rpalli@uky.edu>
Subject: RE: Entomology - Course Use Request - FNR PhD Program

Hi Reddy,

Two points in response to this:

1. In Jeff's email I'm not sure what he's referring to by saying "I'm writing to ask for permission to use multiple courses offered by your unit." What does he mean by "use"? Allow their PhD students to enroll in them? (they could do that without your permission). Cross list them? (I'm not sure of the implications of that).

2. Why are they only concerned with those three courses? Mine are already cross-listed in FOR, so they're unimportant to this discussion. But as I look at our course offerings I can envision several that would be relevant to FNR PhD's. I agree that Taxonomy and Immatures are pertinent. But there are multiple other courses (568, 635, 665, 561, 680) that may be quite relevant, depending on the dissertation research topic. Advanced Applied Entomology (ENT 574, which Jeff is asking about), as it's been recently taught, would not be relevant to them. I'm wondering why they singled out those three courses and overlooked a number of others that appear as (or more) relevant).

I agree with Jeff in that the number of students he's referring to will be quite small – this could actually be a boon to our course enrollment, I just don't fully understand what he's asking you for.

Sincerely,

Lynne

From: Palli, Subba
Sent: Sunday, March 04, 2018 2:30 PM
To: Rieske-Kinney, Lynne <lynne.rieske-kinney@uky.edu>
Subject: Fwd: Entomology - Course Use Request - FNR PhD Program

Hi Lynne,

Please let me know if you agree to include three courses listed in the email copied below in FNR Ph.D program.

Reddy

Sent via the Samsung Galaxy S7, an AT&T 4G LTE smartphone

-------- Original message --------

From: "Stringer, Jeffrey" <jeffrey.stringer@uky.edu>

Date: 3/2/18 7:52 AM (GMT-05:00)

To: "Palli, Subba" <rpalli@uky.edu>

Cc: "Price, Steven" <steven.price@uky.edu>

Subject: Entomology - Course Use Request - FNR PhD Program

EMemo

To: Entomology / Dr. Subba Reddy Palli

From: Dr. Jeff Stringer

Subject: Formal Request for Course Use in Proposed Forestry and Natural Resource PhD Program

The Department of Forestry and Natural Resources (FNR) is in the process of proposing a new doctoral program in Forest and Natural Resource Sciences. Currently, a doctoral program in forestry, natural resources, and related applied ecological disciplines is not offered at any university in Commonwealth. Our program will offer PhD students an individualized yet comprehensive program in management and conservation of natural resources and the environment, which will include substantial scientific investigations in topics cumulating in a defense of a dissertation. Coursework will vary depending on students' research areas and deficiencies (as determined by their advisory committee). We anticipate bringing in 2-3 students per year. I'm writing to ask for permission to use multiple courses offered by your unit (listed below). Given the relatively small numbers of students we anticipate annually and the individualized nature of our proposed program, we do not think that the number of students will overwhelm any single course. Note that our Master's students (M.S. Degree in Forest and Natural Resource Sciences) often enroll in the courses listed below.

Courses

ENT 564

ENT 574

ENT 660

Would you be willing to ask your unit faculty if they would approve the use of the course(s) listed above for the proposed doctoral program in Forest and Natural Resource Sciences? The University Senate requires us to submit verification of approval by the unit faculty in the letter of support. The Senate will accept an email that describes a consultative process conducted via email, such as giving departmental faculty the information via email and giving them five or six days to respond with objections or comments.

If there are specific questions please let us know. Steve Price is our DGS that is handling the process and he can address, in a timely manner, any questions that arise. Please contact either of us if needed and thanks in advance for your attention to this request.

Jeffrey W. Stringer, Ph.D.

Chair, Department of Forestry and Natural Resources

Professor Hardwood Silviculture and Forest Operations

Department of Forestry

T.P. Cooper Bldg

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www.forestcertificationcenter.org

University of Kentucky

Schroeder, Margaret <mmohr2@g.uky.edu>

Fw: LA - Course Use Request - FNR PhD Program

Price, Steven <steven.price@uky.edu> Thu, Mar 22, 2018 at 12:48 PM
To: "Schroeder, Margaret" <m.mohr@uky.edu>

Margaret,

Please see the coursework approval letter from Landscape Architecture. Thanks

Steven J. Price, Ph.D.

Associate Professor of Stream and Riparian Ecology

Director of Graduate Studies (Forest and Natural Resource Sciences)

Department of Forestry and Natural Resources

University of Kentucky

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From: Crankshaw, Ned
Sent: Thursday, March 15, 2018 3:11 PM
To: Price, Steven
Cc: Stringer, Jeffrey
Subject: RE: LA - Course Use Request - FNR PhD Program

Steven and Jeff,

The Landscape Architecture faculty voted unanimously on March 8, 2017 to approve the use of LA 556 in the proposed Forestry and Natural Resources PhD program. The faculty also noted that LA 556 is cross-listed as NRE 556. Further, the faculty suggested that the FNR PhD program consider the use of LA 531: Water in the Urbanizing Landscape and advance approved this course for listing in the event it should be included.

Best,

Ned

From: Price, Steven
Sent: Thursday, March 15, 2018 1:16 PM
To: Crankshaw, Ned <ned.crankshaw@uky.edu>

Cc: Stringer, Jeffrey <jeffrey.stringer@uky.edu>
Subject: Re: LA - Course Use Request - FNR PhD Program

Dr. Crankshaw,

This email serves as friendly reminder regarding the course use request for the proposed Forestry and Natural Resources PhD program (see below).

To assist in responding to our recent request for approving the use of your course(s) in the proposed PhD program being developed by the Department of Forestry and Natural Resources we provide the response template below. The university requires that the faculty of the offering unit must be consulted and approval of the use of the course(s) and a response (electronic or hardcopy) indicating faculty engagement and response is required. The template below is provided to assist in this, but please respond as you deem appropriate.

Thanks again for your assistance with this request and let me know if you have any questions.

Memo

To: Department of Forestry and Natural Resources Chair and DGS (J. Stringer and S. Price)

From: **********

Subject: Course approval for Forest and Natural Resource PhD program

Faculty in ********** were consulted regarding the request by the Department of Forestry and Natural Resources to use the courses listed below to satisfy requirements associated with the proposed PhD in Forest and Natural Resource Sciences degree.

Course list: *********

The consult indicated that the faculty ***(approve/reject or appropriate wording)*** the use of the listed courses. We understand that typically there will only be a few students per year that will enroll in one or more of the listed courses and we anticipate space available for them to do

Steven J. Price, Ph.D.

Associate Professor of Stream and Riparian Ecology

Director of Graduate Studies (Forest and Natural Resource Sciences)

Department of Forestry and Natural Resources

University of Kentucky

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Graduate Program in Forest and Natural Resource Sciences: https://forestry.ca.uky.edu/forestry-graduate-program

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From: Stringer, Jeffrey
Sent: Friday, March 2, 2018 7:59 AM
To: Crankshaw, Ned
Cc: Price, Steven
Subject: LA - Course Use Request - FNR PhD Program

EMemo

To: Landscape Architecture / Dr. Ned Crankshaw

From: Dr. Jeff Stringer

Subject: Formal Request for Course Use in Proposed Forestry and Natural Resource PhD Program

The Department of Forestry and Natural Resources (FNR) is in the process of proposing a new doctoral program in Forest and Natural Resource Sciences. Currently, a doctoral program in forestry, natural resources, and related applied ecological disciplines is not offered at any university in Commonwealth. Our program will offer PhD students an individualized yet comprehensive program in management and conservation of natural resources and the environment, which will include substantial scientific investigations in topics cumulating in a defense of a dissertation. Coursework will vary depending on students' research areas and deficiencies (as determined by their advisory committee). We anticipate bringing in 2-3 students per year. I'm writing to ask for permission to use LA 556 offered by your unit. Given the relatively small numbers of students we anticipate annually and the individualized nature of our proposed program, we do not think that the number of students will overwhelm any single course.

Would you be willing to ask your unit faculty if they would approve the use of the course(s) listed above for the proposed doctoral program in Forest and Natural Resource Sciences? The University Senate requires us to submit verification of approval by the unit faculty in the letter of support. The Senate will accept an email that describes a consultative process conducted via email, such as giving departmental faculty the information via email and giving them five or six days to respond with objections or comments.

If there are specific questions please let us know. Steve Price is our DGS that is handling the process and he can address, in a timely manner, any questions that arise. Please contact either of us if needed and thanks in advance for your attention to this request.

Jeffrey W. Stringer, Ph.D.

Chair, Department of Forestry and Natural Resources

Professor Hardwood Silviculture and Forest Operations

Department of Forestry

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University of Kentucky

Schroeder, Margaret <mmohr2@g.uky.edu>

Fw: FNRS PhD program

Price, Steven <steven.price@uky.edu> Thu, Mar 22, 2018 at 12:59 PM
To: "Schroeder, Margaret" <m.mohr@uky.edu>, "Brothers, Sheila" <sbrothers@uky.edu>

Margaret and Sheila,

See below regarding IPSS support for FNRS PhD program. Mark Coyne (DGS for IPSS Graduate Program) polled IPSS faculty and asked if they approved or disapproved of FNRS PhD program. Will this work as a letter of support?

Thanks

Steven J. Price, Ph.D.

Associate Professor of Stream and Riparian Ecology

Director of Graduate Studies (Forest and Natural Resource Sciences)

Department of Forestry and Natural Resources

University of Kentucky

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From: Grabau, Larry
Sent: Monday, March 12, 2018 2:05 PM
To: Price, Steven
Cc: Stringer, Jeffrey
Subject: FW: FNRS PhD program

Steve—here is the vote from IPSS; mainly favorable.

With respect, Larry G.

C: Jeff

From: Coyne, Mark
Sent: Friday, March 09, 2018 8:47 AM
To: Grabau, Larry <larry.grabau@uky.edu>
Cc: McCulley, Rebecca <rebecca.mcculley@uky.edu>; Houtz, Robert L <rhoutz@uky.edu>

Subject: FNRS PhD program

Larry:

In response to your request to poll the IPSS faculty about whether they approved or disapproved the formation of a new Forests and Natural Resources PhD program I received the following response:

Approve: 6

Neutral: 1

Disapprove:1

All of the responses came from faculty in the Plant and Soils Science Department although the request for commentary was sent on both the AGR and IPSS list serves devoted to faculty.

Yours,

M.S. Coyne, PhD

Department of Plant and Soil Sciences

DGS, IPSS Graduate Program

Mark.coyne@uky.edu<mailto:Mark.coyne@yky.edu>

859-257-4202

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UNIVERSITY OF KENTUCKY

March 26, 2018

RE: NRES support for Forestry and Natural Resources PhD program

The faculty of the interdisciplinary Natural Resources and Environmental Science (NRES) undergraduate B.S. degree program, represented by the NRES Steering Committee members, supports the new Forestry and Natural Resources PhD program. Steering Committee members approved support of the FNR PhD program by 8 votes in favor and 1 abstain via email on or before March 23, 2018.

Sincerely,

Mary A. Arthur
Professor of Forest Ecology
Chair, Steering Committee, Natural Resources and Environmental Sciences

University of Kentucky
College of Arts & Sciences
Department of Biology

March 29, 2018

Stephen Price
Department of Forestry
University of Kentucky
Lexington, KY 40506

Dear Steve,

Biology has discussed the course lists that you plan to include as part of the elective options for courses in your new PhD program in Forestry and Natural Resources. These courses include several 500 and 600 level courses taught by Biology faculty members as well as an array of cross-listed courses taught elsewhere. We have no problems with listing these courses and support your efforts to get this new PhD program up and running.

Sincerely,

David F. Westneat, DGS of Biology

Vincent M. Cassone, Chair of Biology

Department of Statistics
349 Multidisciplinary Science Building
725 Rose Street
Lexington, KY 40536-0082
859 257-6115

To: **Department of Forestry and Natural Resources Chair and DGS (J. Stringer and S. Price)**

From: **Bill Rayens, Associate Chair**
Department of Statistics

Date: **March 8, 2018**

We understand that the Department of Forestry and Natural Resources is proposing a Ph.D. in Forest and Natural Resource Science. As part of that degree proposal, it has been requested that students be able to use the courses listed below (assuming they have met the required prerequisties):

- STA 524
- STA 525
- STA 569
- STA 570
- STA 580
- STA 671
- STA 672
- STA 677

We understand that typically there will be only a few students per year that will enroll in one or more of these courses, so we do not anticipate that we will have to offer any additional sections in order to accommodate this potential change in enrollment. I am authorized to deliver this support for the Department of Statistics and no full faculty approval is required by our Department for this kind of acknowledgment.

We look forward to having your students.

University of Kentucky
Department of Biosystems and Agricultural Engineering
College of Agriculture, Food and Environment
College of Engineering

TO: Jeff Stringer and Steven Price (Chair and DGS of Forestry)

FROM: Michael Montross

DATE: March 28, 2018

SUBJECT: Course approval for Forestry and Natural Resource Sciences PhD

Faculty in Biosystems and Agricultural Engineering were consulted regarding the request by the Department of Forestry and Natural Resources to use the courses listed below to satisfy requirements associated with the proposed PhD in Forest and Natural Resource Sciences degree.

Course list: BAE 502 (with consent of instructor), BAE 532 and BAE 662.

The consult indicated that the faculty approved (via email with a vote of 8 to 0) the use of the listed courses. We understand that typically there will only be a few students per year that will enroll in one or more of the listed courses and we anticipate space available for them to do so.

Please contact me if you need additional information.