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New UC: Environmental Engineering

SM Schroeder, Margaret

Today, 3:13 PM

Brothers, Sheila; Bird-Pollan, Jennifer; Cramer, Aaron; Pennell, Kelly



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Inbox

UC_Environmental Engi...

2 MB

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Proposed New Undergraduate Certificate in Environmental Engineering

This is a recommendation that the University Senate approve the establishment of a new Undergraduate Certificate: Environmental Engineering, in the College of Engineering

Rationale:

The purpose of the Environmental Engineering Certificate is to offer current (and incoming) degree-seeking undergraduate students in the College of Engineering a curriculum that integrates principles of engineering, biology, and chemistry with the development of sustainable solutions to environmental problems impacting ecosystem and human health. The proposed Environmental Engineering Certificate will: 1) formalize environmental engineering training taking place across various degree programs within the College of Engineering; 2) raise visibility of environmental engineering as a discipline among students, faculty and advisors; and, 3) increase cross-departmental interaction among four departments within the College of Engineering. Each year, they plan to admit ~5-10 students/year. This translates to a running enrollment of 20-30 students in the program.

Thanks!
Margaret

[Margaret J. Mohr-Schroeder, PhD](#) | Professor of STEM Education | [SAPC University Senate Committee Chair](#) | [University Senator/Senate Council Member](#) - Vice Chair | [STEM PLUS Program Co-Chair](#) | [Department of STEM Education](#) | [University of Kentucky](#) | www.margaretmohrschroeder.com

NEW UNDERGRADUATE CERTIFICATE

An Undergraduate Certificate is an integrated group of courses (as defined here 12 or more credits) that are 1) cross-disciplinary, but with a thematic consistency, and 2) form a distinctive complement to a student's major and degree program, or 3) leads to the acquisition of a defined set of skills or expertise that will enhance the success of the student upon graduation. Undergraduate Certificates meet a clearly defined educational need of a constituency group, such as continuing education or accreditation for a particular profession; provide a basic competency in an emerging area within a discipline or across disciplines; or respond to a specific state mandate.

After the proposal receives college approval, please submit this form electronically to the Undergraduate Council. 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 included in the Bulletin. The contact person listed on the form will be informed when the proposal has been sent to committee and other times, subsequent to academic council review.

Please click [here](#) for more information about undergraduate certificates.

1. GENERAL INFORMATION			
1a	Date of contact with Institutional Effectiveness (IE) ¹ :	11-9-17	
	<input checked="" type="checkbox"/> Appended to the end of this form is a PDF of the reply from Institutional Effectiveness.		
1b	Home college: College of Engineering		
1c	Home educational unit (department, school, college ²): <i>College</i>		
1d	Proposed certificate name: <i>Environmental Engineering</i>		
1e	CIP Code ³ : <i>15.0507</i>		
1f	Requested effective date:	<input type="checkbox"/> Fall semester following approval.	OR <input checked="" type="checkbox"/> Specific Date ⁴ : <i>Fall 2018</i>
1g	Contact person name: <i>Kelly Pennell</i>	Email: <i>kellypennell@uky.edu</i>	Phone: <i>(859)218-2540</i>
2. OVERVIEW			
2a	Provide a brief description of the proposed new undergraduate certificate. (300 word limit)		
	<i>The purpose of the Environmental Engineering Certificate is to offer current (and incoming) degree-seeking undergraduate students in the College of Engineering a curriculum that integrates principles of engineering, biology, and chemistry with the development of sustainable solutions to environmental problems impacting</i>		

¹ You can reach Institutional Effectiveness by phone or email (257-2873 or institutionaleffectiveness@uky.edu).

² Only cross-disciplinary certificates may be homed at the college level.

³ In consultation with the Undergraduate Council Chair and Registrar, identify the appropriate CIP code(s) *prior* to college-level approval.

⁴ Certificates are typically made effective for the semester following approval. No program will be made effective unless all approvals, up through and including University Senate approval, are received.

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	<i>ecosystem and human health. The proposed Environmental Engineering Certificate will: 1) formalize environmental engineering training taking place across various degree programs within the College of Engineering; 2) raise visibility of environmental engineering as a discipline among students, faculty and advisors; and, 3) increase cross-departmental interaction among four departments within the College of Engineering.</i>		
2b	This proposed undergraduate certificate (check all that apply):		
	<input checked="" type="checkbox"/> Is cross-disciplinary ⁵ .		
	<input type="checkbox"/> Is certified by a professional or accredited organization/governmental agency.		
	<input type="checkbox"/> Clearly leads to advanced specialization in a field.		
2c	Affiliation. Is the undergraduate certificate affiliated with a degree program?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
	If "yes," include a brief statement of how it will complement the program. If it is not affiliated with a degree program, incorporate a statement as to how it will provide an opportunity for a student to gain knowledge or skills not already available at UK. (300 word limit)		
	<i>The College of Engineering does not offer a specific degree program in environmental engineering. Therefore, prospective students who are interested in environmental engineering have the difficult decision of choosing a different university (with an environmental engineering major), or navigating a degree program from the four different degrees offered within the College of Engineering-- Biosystems Engineering; Civil Engineering; Chemical and Materials Engineering; and, Mining Engineering. Each of these degree programs within the College of Engineering offer courses that relate in some way to environmental engineering topics; however, for most students just learning about the environmental engineering field, recognizing how environmental engineering fits within each of these different degree programs is overwhelming. The proposed Environmental Engineering Certificate aims to address this issue.</i>		
2d	Duplication. Are there similar regional or national offerings?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
	If "Yes," explain how the proposed certificate will or will not compete with similar regional or national offerings.		
	None Known		
2d	Rationale and Demand. Explain the need for the new undergraduate certificate (e.g. market demand and cross-disciplinary considerations). (300 word limit)		
	<i>Many of the College of Engineering's peer-institutions offer environmental engineering degree programs. These institutions compete for our incoming students. University of Alabama offers a BS in environmental engineering, which is offered through their College of Engineering, Department of Civil, Construction, and Environmental Engineering. University of Alabama also offers an 18 credit undergraduate minor in environmental and water resources. In fall 2015, Purdue University launched a new program called Environmental and Ecological Engineering (EEE), which it describes as a "modern approach to environmental engineering". The EEE program currently has 95 undergraduate students enrolled (57% are female), which is the highest among Purdue engineering disciplines (the average female student population in engineering at Purdue is 24%).</i>		
	<i>The proposed Environmental Engineering Certificate will raise the visibility of environmental engineering as a discipline at the University of Kentucky among students, faculty and advisors within the College of Engineering, and increase cross-departmental interaction by involving four departments. The certificate would be competitive with the degree programs at peer-institutions. The proposed certificate along with the traditional engineering degree programs offered within the College of Engineering provides students with expertise to apply their traditional engineering background to the environmental engineering industry.</i>		

⁵ An undergraduate certificate must be cross-disciplinary and students must take courses in at least two disciplines, with a minimum of three credits to be completed in a second discipline.

NEW UNDERGRADUATE CERTIFICATE

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2e	Target audience. Check the box(es) that apply to the target student population.
	<input checked="" type="checkbox"/> Currently enrolled undergraduate students.
	<input type="checkbox"/> Post-baccalaureate students.

2f	Describe the demographics of the intended audience. <i>(150 word limit)</i>
	<p><i>The intended audience are enrolled and incoming engineering undergraduate students. Students are encouraged to apply during their sophomore or junior years and complete their course work in their 2nd, 3rd and 4th years. Each year, we plan to admit ~5-10 students/year. This translates to a running enrollment of 20-30 students in the program. Previously, an unofficial environmental engineering certificate, which primarily targeted civil and chemical/materials engineering undergraduate degree seeking students was administered by the Kentucky Water Resources Research Institute. During the 2017-2018 academic year, 5 students were awarded an unofficial certificate that followed the criteria in this application.</i></p> <p><i>Based on national trends, environmental engineering topics often attract and retain an increased number of female students. Female engineering students are a minority group in the College of Engineering. Therefore, female students are an important audience for the proposed certificate. 2 of 5 certificatees for 2017/2018.</i></p>

2g	Projected enrollment. What are the enrollment projections for the first three years?			
		<i>Year 1</i>	<i>Year 2 (Yr. 1 continuing + new entering)</i>	<i>Year 3 (Yrs. 1 and 2 continuing + new entering)</i>
	<i>Number of Students</i>	5	15	25

2h	Distance learning (DL). Initially, will any portion of the undergraduate certificate be offered via DL?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
	If "Yes," please indicate below the percentage of the certificate that will be offered via DL.				
	1% - 24% <input type="checkbox"/>	25% - 49% <input type="checkbox"/>	50% - 74% <input type="checkbox"/>	75 - 99% <input type="checkbox"/>	100% <input type="checkbox"/>

	If "Yes," describe the DL course(s) in detail, including the number of required DL courses. <i>(200 word limit)</i>

3. ADMINISTRATION AND RESOURCES

3a	Administration. Describe how the proposed undergraduate certificate will be administered, including admissions, student advising, retention, etc. <i>(150 word limit)</i>
	<p><i>We will encourage students to apply to the program during the fall semester of their sophomore year; however students can apply anytime until graduation. The application process will include an online form, a written statement about career goals, and an interview with a member of the faculty of record. In order for students to be admitted, they must be in "good" standing as defined by the College, and they must meet the requirements of the certificate. After admission, all students enrolled in the program will meet annually with the director of the program or a faculty of record to assess progress, aid in course selection, and provide guidance with career goals.</i></p>

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3b	<p>Faculty of Record. The Faculty of Record consists of the undergraduate certificate director and other faculty who will be responsible for planning and participating in the certificate program. Describe the process for identifying the certificate director. Regarding membership, include the aspects below. <i>(150 word limit)</i></p> <ul style="list-style-type: none"> • Selection criteria; • Whether the member is voting or non-voting; • Term of service; and • Method for adding/removing members. 																		
<p><i>Director and/or Co-directors of the Program (3 year appointment) will be appointed by the Dean of the College of Engineering, selected from the following departments: BAE; CE; CME; MNG.</i></p> <p><i>Faculty of record will come from College of Engineering, selected from BAE, CE, CME and MNG. The faculty will have appropriate experience in the environmental and/or water related fields. The faculty of record will be responsible for the oversight and direction of the program and will all be voting members. Appointments to the faculty of record will be made yearly. Addition and removal of members to the faculty of record will be made by the Director/Co-directors with guidance from Department Chairs.</i></p> <p><i>Faculty of Record:</i> <i>Dr. Kelly G. Pennell (CE) - Director</i> <i>Dr. Carmen Agouridis (BAE)</i> <i>Dr. Dibakar Bhattacharyya (CME)</i> <i>Dr. Gail Brion (CE, DUS)</i> <i>Dr. Bill Ford (BAE)</i> <i>Dr. Isabel Escobar (CME)</i> <i>Dr. Joe Sottile (MNG, DUS)</i></p>																			
3c	<p>Advisory board. Will the undergraduate certificate have an advisory board⁶? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>If “Yes,” please describe the standards by which the faculty of record will add or remove members of the advisory board. <i>(150 word limit)</i></p> <p>If “Yes,” please list below the <u>number</u> of each type of individual (as applicable) who will be involved in the advisory board.</p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <tr><td style="width:10%;"></td><td>Faculty within the college who are within the home educational unit.</td></tr> <tr><td></td><td>Faculty within the college who are outside the home educational unit.</td></tr> <tr><td></td><td>Faculty outside the college who are within the University.</td></tr> <tr><td></td><td>Faculty outside the college and outside the University who are within the United States.</td></tr> <tr><td></td><td>Faculty outside the college and outside the University who are outside the United States.</td></tr> <tr><td></td><td>Students who are currently in the program.</td></tr> <tr><td></td><td>Students who recently graduated from the program.</td></tr> <tr><td></td><td>Members of industry.</td></tr> <tr><td></td><td>Community volunteers.</td></tr> </table>		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.
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	Faculty within the college who are outside the home educational unit.																		
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	Students who are currently in the program.																		
	Students who recently graduated from the program.																		
	Members of industry.																		
	Community volunteers.																		

⁶ An advisory board includes both faculty and non-faculty who advise the faculty of record on matters related to the program, e.g. national trends and industry expectations of graduates.

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	Other. Please explain:		
	Total Number of Advisory Board Members		
3d	Course utilization. Will this undergraduate certificate utilize courses from other academic units?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
	<p>If "Yes," two pieces of supporting documentation are required.</p> <p><input checked="" type="checkbox"/> Check to confirm that appended to the end of this form is a letter of support from the other units' chair/director⁷ from which individual courses will be used. The letter must include demonstration of true collaboration between multiple units⁸ and impact on the course's use on the home educational unit.</p> <p><input type="checkbox"/> 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.</p>		
3e	<p>Financial Resources. What are the (non-course) resource implications for the proposed undergraduate certificate, including any projected budget needs? (300 word limit)</p> <p><i>The College of Engineering has necessary resources to develop a website to advertise the certificate program and allow applicant to apply to the certificate program. Additional marketing materials will also be developed by the College of Engineering, as necessary.</i></p>		
3f	Other Resources. Will the proposed undergraduate certificate utilize resources (e.g. departmentally controlled equipment or lab space) from additional units/ programs?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
	<p>If "Yes," identify the other resources that will be shared. (150 word limit)</p>		
	<p>If "Yes," two pieces of supporting documentation are required.</p> <p><input type="checkbox"/> Check to confirm that appended to the end of this form is a letter of support from the appropriate chair/director⁹ of the unit whose "other resources" will be used.</p> <p><input type="checkbox"/> 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.</p>		
4. IMPACT			
4a	Other related programs. Are there any related UK programs and certificates?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
	<p>If "Yes," describe how the new certificate will complement these existing UK offerings. (250 word limit)</p>		
	<p>If "Yes," two pieces of supporting documentation are required.</p> <p><input type="checkbox"/> Check to confirm that appended to the end of this form is a letter of support from the appropriate chair/director of the unit whose "other resources" will be used.</p>		

⁷ A dean may submit a letter only when there is no educational unit below the college level, i.e. there is no department/school.

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

⁹ A dean may submit a letter only when there is no educational unit below the college level, i.e. there are no departments/schools.

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Check to confirm that appended to the end of this form is verification that the chair/director has input from the faculty members of the unit. This typically takes the form of meeting minutes.

5. ADMISSIONS CRITERIA AND CURRICULUM STRUCTURE

5a Admissions criteria. List the admissions criteria for the proposed undergraduate certificate. *(150 word limit)*
In order for students to be admitted, they must be enrolled in an undergraduate degree program and be in "Good" standing as defined by the College of Engineering. In addition, students must submit an application for the certificate program and go through the program interview process. Selections are made based on input by the faculty of record.

5b Core Courses. List the required courses below.

Prefix & Number	Course Title	Credit Hrs	Course Status ¹⁰
	<i>See Attached Course Plan</i>		Select one....
			Select one....
			Select one....
			Select one....
			Select one....

5c Elective courses. List the electives below.

Prefix & Number	Course Title	Credit Hrs	Course Status ¹¹
	<i>See Attached Course Plan</i>		Select one....
			Select one....
			Select one....
			Select one....
			Select one....
			Select one....

Total Credit Hours:

5d Are there any other requirements for the undergraduate certificate? If "Yes," note below. *(150 word limit)* Yes No

5e Is there any other narrative about the undergraduate certificate that should be included in the Bulletin? If "Yes," please note below. *(300 word limit)* Yes No

For students who are interested in pursuing environmental engineering careers, the Environmental Engineering Certificate enhances traditional educational opportunities offered within the existing degree programs available within the College of Engineering. Environmental engineering careers often begin with educational training in traditional engineering disciplines, but then require specialized cross-disciplinary training to cover a broader

¹⁰ 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").

¹¹ 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").

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	<p><i>breadth of environmental issues. Environmental engineers work on projects related to drinking water, wastewater, storm water, solid waste, air, energy, site assessment and remediation, health and safety, etc. To develop sustainable solutions that address such a wide-range of applications, environmental engineers not only require a strong foundation in engineering principles, but they also must have an understanding of biology and chemistry within the context of natural and engineered systems. The Environmental Engineering Certificate integrates principles of engineering, biology, and chemistry to address environmental problems impacting ecosystem and human health.</i></p>
6. ASSESSMENT	
6a	<p>Student learning outcomes. Please provide the student learning outcomes for this undergraduate certificate. List the knowledge, competencies, and skills (learning outcomes) students will be able to do upon completion. (Use action verbs, not simply “understand.”) (250 word limit)</p>
	<p><i>1. Students will apply engineering science concepts, including biology concepts, chemistry concepts and/or mathematical models to develop solutions to environmental problems.</i> <i>2. Students will demonstrate an understanding of contemporary environmental issues.</i> <i>3. Students will effectively communicate environmental engineering and environmental science concepts to address environmental problems that combine academic disciplines.</i></p>
6b	<p>Student learning outcome (SLO) assessment. How and when will student learning outcomes be assessed? Please map proposed measures to the SLOs they are intended to assess. Do not use grades or indirect measures (e.g. focus groups, surveys) as the sole method. Measures likely include artifacts such as course-embedded assessment (e.g., portfolios, research papers or oral presentations); and test items (embedded test questions, licensure/certification testing, nationally or state-normed exams). (300 word limit)</p>
	<p><i>SLO1: Artifacts will come from the foundational course, CE 351, which will be a common requirement of all certificate recipients.</i> <i>SLO2: Artifacts will come from the foundation course, CE 351, which will be a common requirement of all certificate recipients.</i> <i>SLO3: Artifact will come from the foundation course, CE 351 which will be a common requirement of all certificate recipients.</i></p> <p><i>Artifacts will be assessed using standardized rubrics.</i></p>
6c	<p>Certificate outcome assessment¹². Describe program evaluation procedures for the proposed undergraduate certificate. 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)</p>
	<p><i>Program success will be evaluated on a 3-year cycle. Student performance and meeting of SLO outcomes will be used as primary success indicators. Secondary program success indicators will be measured by evaluating student placement upon graduation. As the program is geared towards identifying students interested in environmental engineering and training them for the field, the number of students to enter the environmental and water-related career and/or graduate programs will be monitored.</i></p>

¹² This is a plan of how the certificate will be assessed, which is different from assessing student learning outcomes.

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7a Is there any other information about the undergraduate certificate to add? (150 word limit)

8. 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
8a	(Within College) In addition to the information below, attach documentation of department and college 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.		
	College of Engineering	11/2/17	Kimberly Anderson / 7-1867 / kimberly.anderson@uky.edu
			/ /
			/ /
			/ /

8b (Collaborating and/or Affected Units)

			/ /
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8c	(Senate Academic Council)	Date Approved	Contact Person Name
	Health Care Colleges Council (if applicable)		
	Undergraduate Council	2/13/18	Joanie Ett-Mims

Course Plan for Environmental Engineering Certificate

The Environmental Engineering undergraduate certificate involves a total of 12 credit hours (200-level or greater). To complete the certificate, student must take the foundation course (CE 351 Introduction to Environmental Engineering), one biology course, one chemistry course, and one course from a focus area. Course substitutions will be considered on a case-by-case basis and must be approved by the Certificate Director.

Foundation Course (3 credit):

CE 351 Introduction to Environmental Engineering (Spring, Fall, Summer)

Biology Course (Choose one course, 3 credit):

BIO 308 or 208 Principles of Microbiology (Spring, Fall, Summer)

CE 555 Microbial Aspects of Environmental Engineering (Fall)

PLS 566 Soil Microbiology (Spring)

Chemistry (Choose one course, 3 credit):

CHE 226 Analytical Chemistry (Spring, Fall)

CHE 230 Organic Chemistry I (Spring, Summer, Fall)

CHE 236 Survey of Organic Chemistry (Spring, Fall)

CHE 565 Environmental Chemistry

Focus Areas (Choose one course, 3 credit):

<i>Natural Water Systems</i>	BAE 532/CE 542 Introduction to Stream Restoration BAE 535/MNG 564 Environmental Control Systems Design and Reclamation CE 547/BAE 547 Watershed Sedimentation
<i>Water and Wastewater Treatment</i>	BAE 435G Waste Management for Biosystems CE 551 Water and Wastewater Treatment Engineering CME 580 Design of Rate and Equilibrium Processes for Water Pollution CME 599 Topics in Chemical Engineering CME 395 Independent Research Course (Environmental related) CME 599 Membrane Science and Technology
<i>Stormwater</i>	BAE 599 Topics in Biosystems Engineering – Low Impact Development (New course application forthcoming)
<i>Air</i>	MNG 341 Mine Ventilation MNG 541 Computerized Design of Mine Ventilation Systems
<i>Energy</i>	CE 553 Environmental Consequences of Energy Production CME 523 Concepts, Assessment Tools and Methods in Sustainable Power and Energy
<i>Environmental Health and Remediation</i>	CE 599 Subsurface Remediation Engineering (New course application forthcoming)
<i>Health and Safety</i>	MNG 322 Mine Safety and Health Management Processes (Note: 2 credit course, additional course credit must be satisfied)
<i>Chemistry</i>	CHE 565 Environmental Chemistry
<i>Biology</i>	CE 555 Microbial Aspects of Environmental Engineering
<i>Regulations</i>	AEC 445G Introduction to Resource/Environmental Economics
<i>Misc.</i>	prefix-395 Independent Research Courses, must be approved by Director prefix-599 Special Topics Engineering Courses, must be approved by Director

Note: Course substitutions will be considered on a case-by-case basis and must be approved by the Certificate co-directors.

Brandenburg, Barbara J

From: Pearson, RaeAnne M
Sent: Thursday, November 09, 2017 5:16 PM
To: Brandenburg, Barbara J
Cc: Office of Strategic Planning and Institutional Effectiveness
Subject: RE: UK_SubChange Checklist_Environmental.docx

Dear Barbara Brandenburg,
Thank you for your email regarding the proposed program, **Environmental Engineering, Undegraduate Certificate (15.0507)**.

My email will serve 2 purposes: 1.) Next steps for SACSCOC, and 2.) Verification and notification that you have contacted OSPIE—a Senate requirement for proposal approval.

1. **Next steps for SACSCOC:** None required
2. **Verification that OSPIE has reviewed the proposal:** Based on the proposed documentation presented and the Substantive Change Checklist, the proposed program does not constitute a substantive change as defined by the University or SACSCOC, the university's regional accreditor. Therefore, no additional information is required by the Office of Strategic Planning & Institutional Effectiveness at this time. The proposed program may move forward in accordance with college and university-level approval processes.

Should you have questions or concerns about UK's substantive change policy and its procedures, please do not hesitate contacting me.

RaeAnne Pearson, PhD

Office of Strategic Planning & Institutional Effectiveness

University of Kentucky

Phone: 859-218-4009

Fax: 859-323-8688

Visit the Institutional Effectiveness Website: <http://www.uky.edu/ie>

see blue.[™]

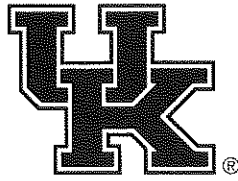
From: Brandenburg, Barbara J
Sent: Friday, November 03, 2017 3:04 PM
To: Pearson, RaeAnne M
Subject: UK_SubChange Checklist_Environmental.docx

RaeAnne,

Here is our last undergraduate certificate at this time. We will have one more in the near future.

Thanks,

BJ
BJ Brandenburg
College of Engineering



University of Kentucky
College of Engineering
Office of the Dean

351 Ralph G. Anderson Bldg.
Lexington, KY 40506-0503
P: 859-257-1687
F: 859-257-5727
www.engr.uky.edu

November 3, 2017

To Whom It May Concern:

The College of Engineering faculty reviewed the Undergraduate Certificate for Environmental Engineering undergraduate certificate via email. There were no concerns or objections raised. The date of approval is November 2, 2017.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kimberly Anderson', with a long horizontal flourish extending to the right.

Kimberly Anderson, Ph.D.
Associate Dean for Administration
and Academic Affairs

see blue.

To: Chairs and Directors of Undergraduate Studies: Biology, Chemistry, Plant and Soil Science, Agricultural Economics, Biosystems and Agricultural Engineering, Chemical and Materials Engineering, Civil Engineering and Mining Engineering; and Associate Dean Kim Anderson.

From: Kelly G. Pennell

CC: B. J. Brandenburg, Student Services, College of Engineering

Date: August 13, 2018

Re: Approval of Courses for Proposed Certificate for Environmental Engineering in the College of Engineering.

The College of Engineering is seeking University Senate approval for a new undergraduate environmental engineering certificate for engineering students. An unofficial certificate has existed in the college of engineering for nearly 15 years and on average 5-10 students acquire the certificate each year. We anticipate a similar number of students will continue to seek the “official” certificate once it receives university senate approval.

Inclusion of a specific borrowed prefix and course number in a proposal requires approval by the department chair, or the director of undergraduate studies. *Per NEW, CURRENT Senate Standards, no vote by the faculty is necessary.*

If you can reply by email (kellypennell@uky.edu) with your response by Friday, August 17th, we would appreciate it.

Certificate Component	Department	Course Numbers
Required Biology Course (students select one course only)	Biology <i>Chair: vincent.cassone@uky.edu</i> <i>DUS: jennifer.osterhage@uky.edu</i>	BIO 208
	Civil Engineering <i>Chair: souleyrette@uky.edu</i> <i>DUS: scott.yost@uky.edu</i>	CE 555
	Plant and Soil Science <i>Chair: rebecca.mcculley@uky.edu</i> <i>DUS: edangelo@uky.edu</i>	PLS 566
Chemistry Course Required (students select one course only)	Chemistry <i>Chair: meier@uky.edu</i> <i>DUS: a.cammers@uky.edu</i>	CHE 226, CHE 230, CHE 236, CHE 565
Required Focus Area Course (students select one course only)	Agricultural Economics <i>Chair: barry.barnett@uky.edu</i> <i>DUS: rogerbrown@uky.edu</i>	AEC 445G
	Biosystems and Agricultural Engineering <i>Chair: michael.montross@uky.edu</i> <i>DUS: joe.dvorak@uky.edu</i>	BAE 532/CE 542, BAE 535/MNG 564, BAE 547/CE 547, BAE 435G, BAE 599, BAE 395
	Chemical and Materials Engineering <i>Chair: douglass.kalika@uky.edu</i> <i>DUS: bknut2@uky.edu</i>	CME 542/EGR 542, CME 580, CME 599, CME 395
	Chemistry (see above)	CHE 565
	Civil Engineering <i>Chair: souleyrette@uky.edu</i> <i>DUS: scott.yost@uky.edu</i>	CE 542/BAE 532, CE 547/BAE 547, CE 551, CE 553/EGR 553, CE 599, CE 555, CE 395
	Engineering Courses <i>Associate Dean: kanderson@enr.uky.edu</i>	EGR 553/CE 553, ERG 542/CME 542
	Mining Engineering <i>Chair: thomas.novak@uky.edu</i> <i>DUS: joseph.sottile@uky.edu</i>	MNG 564/BAE 535, MNG 341, MNG 541, MNG 322, MNG 395
Required Foundational Course	Civil Engineering <i>Chair: souleyrette@uky.edu</i> <i>DUS: scott.yost@uky.edu</i>	CE 351

Pennell, Kelly

From: Brown, Roger
Sent: Tuesday, August 14, 2018 9:26 PM
To: Pennell, Kelly
Cc: Barnett, Barry; Brandenburg, Barbara; Dillon, Carl; Buck, Steven; Schieffer, John
Subject: Re: Agricultural Economics: Approval request for Courses in Proposed Certificate for Environmental Engineering

Hello Dr. Pannell,

Thank you for your email. This sounds like a great program! We (all) approve your use of AEC 445G as part of the proposed environmental engineering certificate.

Best wishes,

Roger

CC:
Barry Barnet (Chair)
Carl Dillon (DGS)
Jack Schieffer (AEC 445G instructor)
Steve Buck (AEC 445G instructor)

On Aug 13, 2018, at 11:25 AM, Pennell, Kelly <kellypennell@uky.edu> wrote:

I am the director of a proposed environmental engineering certificate in the college of engineering. We are seeking University Senate approval for this new undergraduate certificate and we anticipate approximately 5-10 students/year will acquire the certificate. One of the courses is an Agricultural Economics course (AEC 445G). However, this course is one of several from which students can choose.

Inclusion of a specific borrowed prefix and course number in a certificate proposal requires approval by the department chair, or the director of undergraduate studies. *Per NEW, CURRENT Senate Standards, no vote by the faculty is necessary.*

Can you reply by email by Friday 8/17/2018 and let me know if you approve the inclusion of these courses for students who pursue the certificate? All of the students who pursue the certificate will be engineering degree seeking students. Attached is a memo that lists all of courses included in the certificate.

Additional Information about the certificate:

The *Environmental Engineering Undergraduate Certificate* requires a student to complete a total of 12 credit hours (200-level or greater) and offers current (and incoming) degree-seeking undergraduate students in the College of Engineering a curriculum that integrates principles of engineering, biology, and chemistry with the development of sustainable solutions to environmental problems impacting ecosystem and human health. The proposed Environmental Engineering Certificate will: 1) formalize environmental engineering training taking place across various degree programs within the College of Engineering; 2) raise visibility of environmental engineering as a discipline among students, faculty and advisors; and, 3) increase cross-departmental interaction among four departments within the College of Engineering.

Please let me know if you have any questions.

Thank you,
Kelly Pennell

--

Kelly G. Pennell, PhD, PE
Gill Professor of Civil Engineering
Associate Professor, College of Engineering, Department of Civil Engineering

Associate Director, Kentucky Water Resources Research Institute
Assistant Director, UK Superfund Research Center

University of Kentucky
Lexington, KY 40506
859-218-2540
kellypennell@uky.edu

<Approval Request for Courses in Env Eng Certificate 08132018.pdf>

Subject: RE: Biosystems and Agricultural Engineering: Approval request for Courses in Proposed Certificate for Environmental Engineering

Date: Friday, August 17, 2018 at 2:22:39 PM Eastern Daylight Time

From: Montross, Michael

To: Pennell, Kelly, Dvorak, Joseph

CC: Brandenburg, Barbara, Agouridis, Carmen

The inclusion of the courses is approved.

Mike

From: Pennell, Kelly

Sent: Thursday, August 16, 2018 3:08 PM

To: Montross, Michael <michael.montross@uky.edu>; Dvorak, Joseph <joe.dvorak@uky.edu>

Cc: Brandenburg, Barbara <barbara.brandenburg@uky.edu>; Agouridis, Carmen <carmen.agouridis@uky.edu>

Subject: RE: Biosystems and Agricultural Engineering: Approval request for Courses in Proposed Certificate for Environmental Engineering

Hi Mike,

I am circling back with you. We have received approvals from all of the other departments. I am just waiting on BAE. I know you wanted to check with the instructors. Have you received any feedback from them?

I am cc-ing Carmen Agouridis. Carmen will be the certificate co-director if we can get this through the Senate. She is very familiar with the certificate and can answer any questions you have.

I am reattaching the memo which lists the courses for BAE. As a reminder all of the students will be engineering students. Therefore, they are able to register for BAE courses, as long as they have the necessary pre-reqs. Your approval is requested as part of the formal University Senate approval process.

Inclusion of a specific borrowed prefix and course number in a certificate proposal requires approval by the department chair, or the director of undergraduate studies. Per NEW, CURRENT Senate Standards, no vote by the faculty is necessary.

The certificate program has been in existence for over 15 years “unofficially”—we are applying for university approval so the certificate will be listed on student transcripts.

Let me know what I can do to help.

Thanks.

Kelly

--

Kelly G. Pennell, PhD, PE

Gill Professor of Civil Engineering

Associate Professor, College of Engineering, Department of Civil Engineering

University of Kentucky

Lexington, KY 40506

859-218-2540

kellypennell@uky.edu

From: Pennell, Kelly

Sent: Monday, August 13, 2018 12:55 PM

To: Montross, Michael <michael.montross@uky.edu>; Dvorak, Joseph <joe.dvorak@uky.edu>

Cc: Brandenburg, Barbara <barbara.brandenburg@uky.edu>

Subject: RE: Biosystems and Agricultural Engineering: Approval request for Courses in Proposed Certificate for Environmental Engineering

Sure. It should have very limited (...or no) impact, since these courses are already available for engineering students. I just need a formal response per University Senate Rules.

I am happy to talk by phone if you have any questions.

Thank you.

Kelly Pennell

--

Kelly G. Pennell, PhD, PE

Gill Professor of Civil Engineering

Associate Professor, College of Engineering, Department of Civil Engineering

Associate Director, Kentucky Water Resources Research Institute

Assistant Director, UK Superfund Research Center

University of Kentucky

Lexington, KY 40506

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kellypennell@uky.edu

From: Montross, Michael

Sent: Monday, August 13, 2018 12:36 PM

To: Pennell, Kelly <kellypennell@uky.edu>; Dvorak, Joseph <joe.dvorak@uky.edu>

Cc: Brandenburg, Barbara <barbara.brandenburg@uky.edu>

Subject: RE: Biosystems and Agricultural Engineering: Approval request for Courses in Proposed Certificate for Environmental Engineering

The 17th is pretty optimistic. I need to follow up with the people teaching the courses.

Mike

From: Pennell, Kelly

Sent: Monday, August 13, 2018 11:29 AM

To: Dvorak, Joseph <joe.dvorak@uky.edu>; Montross, Michael <michael.montross@uky.edu>

Cc: Brandenburg, Barbara <barbara.brandenburg@uky.edu>

Subject: Biosystems and Agricultural Engineering: Approval request for Courses in Proposed Certificate for Environmental Engineering

I am the director of a proposed environmental engineering certificate in the college of engineering. We are seeking University Senate approval for this new undergraduate certificate and we anticipate approximately 5-10 students/year will acquire the certificate. Some of the courses are offered by Biosystems and Agricultural Engineering, including: BAE 532/CE 542; BAE 535/MNG 564; BAE 547/CE 547; BAE 435G; BAE 599; BAE 395. These course are among many other “focus area courses” from which students can choose. Attached is a memo that lists all of courses included in the certificate.

Inclusion of a specific borrowed prefix and course number in a certificate proposal requires approval by the department chair, or the director of undergraduate studies. Per NEW, CURRENT Senate Standards, no vote by the faculty is necessary.

Can you reply by email by Friday 8/17/2018 and let me know if you approve the inclusion of these courses for students who pursue the certificate? All of the students who pursue the certificate will be engineering degree seeking students.

-
Additional Information about the certificate:

The *Environmental Engineering Undergraduate Certificate* requires a student to complete a total of 12 credit hours (200-level or greater) and offers current (and incoming) degree-seeking undergraduate students in the College of Engineering a curriculum that integrates principles of engineering, biology, and chemistry with the development of sustainable solutions to environmental problems impacting ecosystem and human health. The proposed Environmental Engineering Certificate will: 1) formalize environmental engineering training taking place across various degree programs within the College of Engineering; 2) raise visibility of environmental engineering as a discipline among students, faculty and advisors; and, 3) increase cross-departmental interaction among four departments within the College of Engineering.

- Please let me know if you have any questions.

Thank you,
Kelly Pennell

--
Kelly G. Pennell, PhD, PE
Gill Professor of Civil Engineering
Associate Professor, College of Engineering, Department of Civil Engineering

Associate Director, Kentucky Water Resources Research Institute
Assistant Director, UK Superfund Research Center

University of Kentucky
Lexington, KY 40506
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kellypennell@uky.edu

Pennell, Kelly

From: Cassone, Vincent
Sent: Monday, August 13, 2018 11:39 AM
To: Pennell, Kelly; Osterhage, Jennifer
Cc: Brandenburg, Barbara
Subject: RE: Biology: Approval request for Course in Proposed Certificate for Environmental Engineering

Dear Dr. Pennell,

We support this. However, we recommend you also make BIO 308 an option, which is the majors' microbiology course. It's more rigorous than is Bio 208. It has Bio 148 and CHE as a prerequisite, but you may have students that have met these requirements in your program. I note some of your other recommended courses have prereqs as well.

Yours,

Vincent M. Cassone, Ph.D.
Professor and Chair
Department of Biology
University of Kentucky
Lexington, KY 40506

Phone: 859-257-6766

"I will work harder"
Boxer the Horse

From: Pennell, Kelly
Sent: Monday, August 13, 2018 11:13 AM
To: Cassone, Vincent <vincent.cassone@uky.edu>; Osterhage, Jennifer <jennifer.osterhage@uky.edu>
Cc: Brandenburg, Barbara <barbara.brandenburg@uky.edu>
Subject: Biology: Approval request for Course in Proposed Certificate for Environmental Engineering

I am faculty in civil engineering and the director of a proposed environmental engineering certificate in the college of engineering. We are seeking University Senate approval for this new undergraduate certificate and we anticipate approximately 5-10 students/year will acquire the certificate. One of the courses proposed in the certificate is BIO 208.

Inclusion of a specific borrowed prefix and course number in a certificate proposal requires approval by the department chair, or the director of undergraduate studies. *Per NEW, CURRENT Senate Standards, no vote by the faculty is necessary.*

Can you reply by email by Friday 8/17/2018 and let me know if you approve the inclusion of BIO 208 for students who pursue the certificate program? All of the students who pursue the certificate will be engineering degree seeking students. Attached is a memo that lists all of courses included in the certificate.

Additional Information about the certificate:

The *Environmental Engineering Undergraduate Certificate* requires a student to complete a total of 12 credit hours (200-level or greater) and offers current (and incoming) degree-seeking undergraduate students in the College of Engineering a curriculum that integrates principles of engineering, biology, and chemistry with the development of sustainable solutions to environmental problems impacting ecosystem and human health. The proposed Environmental Engineering Certificate will: 1) formalize environmental engineering training taking place across various degree programs within the College of Engineering; 2) raise visibility of environmental engineering as a discipline among students, faculty and advisors; and, 3) increase cross-departmental interaction among four departments within the College of Engineering.

Please let me know if you have any questions.

Thank you,
Kelly Pennell

--

Kelly G. Pennell, PhD, PE
Gill Professor of Civil Engineering
Associate Professor, College of Engineering, Department of Civil Engineering

Associate Director, Kentucky Water Resources Research Institute
Assistant Director, UK Superfund Research Center

University of Kentucky
Lexington, KY 40506
859-218-2540
kellypennell@uky.edu

Pennell, Kelly

From: Souleyrette, Reginald
Sent: Monday, August 13, 2018 3:14 PM
To: Pennell, Kelly; Yost, Scott
Cc: Brandenburg, Barbara
Subject: RE: Civil Engineering: Approval request for Courses in Proposed Certificate for Environmental Engineering

Dear Kelly,

I am sorry for not reading carefully enough. On behalf of the CE Dept., I approve the use of these CE courses for use in your certificate (e.g., students in the certificate program can take the classes if they have the required prerequisite or co-requisite courses.)

Thanks again,

Reg



Reginald R. "Reg" Souleyrette, PhD, PE, F ASCE
Commonwealth Chair Professor and Chair, Department of Civil Engineering
Program Manager, *Transportation Planning and Data Analytics*, Kentucky Transportation Center
161A Oliver H. Raymond Building; Lexington, Kentucky 40506
University of Kentucky - 859-257-5309 (o) 515-231-7264 (m)

From: Pennell, Kelly
Sent: Monday, August 13, 2018 11:18 AM
To: Yost, Scott <scott.yost@uky.edu>; Souleyrette, Reginald <souleyrette@uky.edu>
Cc: Brandenburg, Barbara <barbara.brandenburg@uky.edu>
Subject: Civil Engineering: Approval request for Courses in Proposed Certificate for Environmental Engineering

I am the director of a proposed environmental engineering certificate in the college of engineering. We are seeking University Senate approval for this new undergraduate certificate and we anticipate approximately 5-10 students/year will acquire the certificate. Some of the courses are civil engineering courses, including: CE 351, CE 542/BAE 532, CE 547/BAE 547, CE 551, CE 553/EGR 553, CE 599, CE 555, and CE 395

Inclusion of a specific borrowed prefix and course number in a certificate proposal requires approval by the department chair, or the director of undergraduate studies. *Per NEW, CURRENT Senate Standards, no vote by the faculty is necessary.*

Can you reply by email by Friday 8/17/2018 and let me know if you approve the inclusion of these courses for students who pursue the certificate program? All of the students who pursue the certificate will be engineering degree seeking students. Attached is a memo that lists all of courses included in the certificate.

Additional Information about the certificate:

The *Environmental Engineering Undergraduate Certificate* requires a student to complete a total of 12 credit hours (200-level or greater) and offers current (and incoming) degree-seeking undergraduate students in the College of Engineering a curriculum that integrates principles of engineering, biology, and chemistry with the development of sustainable solutions to environmental problems impacting ecosystem and human health. The proposed Environmental Engineering Certificate will: 1) formalize environmental engineering training taking place across various degree programs within the College of Engineering; 2) raise visibility of environmental engineering as a discipline among students, faculty and advisors; and, 3) increase cross-departmental interaction among four departments within the College of Engineering.

Please let me know if you have any questions.

Thank you,
Kelly Pennell

--

Kelly G. Pennell, PhD, PE
Gill Professor of Civil Engineering
Associate Professor, College of Engineering, Department of Civil Engineering

Associate Director, Kentucky Water Resources Research Institute
Assistant Director, UK Superfund Research Center

University of Kentucky
Lexington, KY 40506
859-218-2540
kellypennell@uky.edu

Pennell, Kelly

From: Cammers, Arthur
Sent: Monday, August 13, 2018 1:23 PM
To: Meier, Mark; Pennell, Kelly
Cc: Brandenburg, Barbara
Subject: Re: Chemistry: Approval request for Courses in Proposed Certificate for Environmental Engineering

Hello Prof. Pennell:

The Environmental Engineering program certainly can have access to CHE 236, 230, 226 and 565. A&S Chemistry will easily be able to provide instruction for an additional 10 students distributed throughout one or all of these classes.

Thanks for communicating

Art

CC: Chemistry Chair – to whom I defer authority / opinion

From: Pennell, Kelly
Sent: Monday, August 13, 11:19
Subject: Chemistry: Approval request for Courses in Proposed Certificate for Environmental Engineering
To: Meier, Mark, Cammers, Arthur
Cc: Brandenburg, Barbara

I am the director of a proposed environmental engineering certificate in the college of engineering. We are seeking University Senate approval for this new undergraduate certificate and we anticipate approximately 5-10 students/year will acquire the certificate. Some of the courses are Chemistry courses, including: CHE 226; CHE 230; CHE 236; and CHE 565.

Inclusion of a specific borrowed prefix and course number in a certificate proposal requires approval by the department chair, or the director of undergraduate studies. Per NEW, CURRENT Senate Standards, no vote by the faculty is necessary.

Can you reply by email by Friday 8/17/2018 and let me know if you approve the inclusion of these courses for students who pursue the certificate? All of the students who pursue the certificate will be engineering degree seeking students. Attached is a memo that lists all of courses included in the certificate.

Additional Information about the certificate:

The *Environmental Engineering Undergraduate Certificate* requires a student to complete a total of 12 credit hours (200-level or greater) and offers current (and incoming) degree-seeking undergraduate students in the College of Engineering a curriculum that integrates principles of engineering, biology, and chemistry with the development of sustainable solutions to environmental problems impacting ecosystem and human health. The proposed Environmental Engineering Certificate will: 1) formalize environmental engineering training taking place across various degree programs within the College of Engineering; 2) raise visibility of environmental engineering as a discipline among students, faculty and advisors; and, 3) increase cross-departmental interaction among four departments within the College of Engineering.

Please let me know if you have any questions.

Thank you,
Kelly Pennell

--

Kelly G. Pennell, PhD, PE
Gill Professor of Civil Engineering
Associate Professor, College of Engineering, Department of Civil Engineering

Associate Director, Kentucky Water Resources Research Institute
Assistant Director, UK Superfund Research Center

University of Kentucky
Lexington, KY 40506
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kellypennell@uky.edu

Pennell, Kelly

From: Knutson, Barbara
Sent: Tuesday, August 14, 2018 11:58 AM
To: Pennell, Kelly; Kalika, Douglass
Subject: RE: Chemical and Materials Engineering: Approval request for Courses in Proposed Certificate for Environmental Engineering

I approve the courses offered by CME as part of the proposed Certificate in Environmental Engineering. These courses include: CME 542/EGR 542, CME 580, CME 599, CME 395 AND CME 523.

Regards,
Barbara Knutson

Barbara Knutson
Professor & Director of Undergraduate Studies
University of Kentucky
Department of Chemical and Materials Engineering
177 Anderson Hall
Lexington, KY 40506
Office: (859) 257-5715 FAX: (859) 323-1929

From: Pennell, Kelly
Sent: Tuesday, August 14, 2018 10:07 AM
To: Kalika, Douglass <douglass.kalika@uky.edu>
Cc: Knutson, Barbara <bknut2@uky.edu>
Subject: RE: Chemical and Materials Engineering: Approval request for Courses in Proposed Certificate for Environmental Engineering

Thank you, Doug, for your recommendation. I will add CME 523. Can you reply and confirm that you approve the courses offered by CME, including: CME 542/EGR 542, CME 580, CME 599, CME 395 AND CME 523? I will include your reply when we submit our package to the University Senate.

Thanks again,
Kelly Pennell

From: Kalika, Douglass
Sent: Monday, August 13, 2018 3:21 PM
To: Pennell, Kelly <kellypennell@uky.edu>
Cc: Knutson, Barbara <bknut2@uky.edu>
Subject: Chemical and Materials Engineering: Approval request for Courses in Proposed Certificate for Environmental Engineering

Kelly,

I will confirm with Barbara on the proposed course list; I do not see any obvious issues.

You may also wish to include the formal listing for Jeff Seay's course, CME 523. I believe he has developed this course for on-line delivery, so it should be available to Lexington students.

DOUG

CME 523 CONCEPTS, ASSESSMENT TOOLS AND METHODS IN SUSTAINABLE POWER AND ENERGY.

A multidisciplinary course presenting an overview of key topics in sustainability and environmental impact assessment. Topics will include assessment of current and future energy systems, renewable and conventional energy technology management, sustainability metrics, energy assessment tools, environmental impact assessment and life cycle assessment and their attributes described within a framework that aids in evaluation and analysis of energy technology in the context of political, social, economic, and environmental goals. Prereq: Engineering Standing and Senior Class of Instructor. (Same as EGR/MFS 523.)

Douglass S. Kalika
Professor and Chair
Department of Chemical and Materials Engineering
University of Kentucky
177 Anderson Tower (FPAT)
Lexington, KY 40506-0046
859-257-5507
douglass.kalika@uky.edu

From: Pennell, Kelly
Sent: Monday, August 13, 2018 11:30 AM
To: Kalika, Douglass <douglass.kalika@uky.edu>; Knutson, Barbara <bknut2@uky.edu>
Cc: Brandenburg, Barbara <barbara.brandenburg@uky.edu>
Subject: Chemical and Materials Engineering: Approval request for Courses in Proposed Certificate for Environmental Engineering

I am the director of a proposed environmental engineering certificate in the college of engineering. We are seeking University Senate approval for this new undergraduate certificate and we anticipate approximately 5-10 students/year will acquire the certificate. Some of the courses are offered by CME, including: CME 542/EGR 542, CME 580, CME 599, CME 395. These course are among many other "focus area courses" from which students can choose. Attached is a memo that lists all of courses included in the certificate.

Inclusion of a specific borrowed prefix and course number in a certificate proposal requires approval by the department chair, or the director of undergraduate studies. Per NEW, CURRENT Senate Standards, no vote by the faculty is necessary.

Can you reply by email by Friday 8/17/2018 and let me know if you approve the inclusion of these courses for students who pursue the certificate? All of the students who pursue the certificate will be engineering degree seeking students.

Additional Information about the certificate:

The *Environmental Engineering Undergraduate Certificate* requires a student to complete a total of 12 credit hours (200-level or greater) and offers current (and incoming) degree-seeking undergraduate students in the College of Engineering a curriculum that integrates principles of engineering, biology, and chemistry with the development of sustainable solutions to environmental problems impacting ecosystem and human health. The proposed Environmental Engineering

Certificate will: 1) formalize environmental engineering training taking place across various degree programs within the College of Engineering; 2) raise visibility of environmental engineering as a discipline among students, faculty and advisors; and, 3) increase cross-departmental interaction among four departments within the College of Engineering.

Please let me know if you have any questions.

Thank you,
Kelly Pennell

--

Kelly G. Pennell, PhD, PE
Gill Professor of Civil Engineering
Associate Professor, College of Engineering, Department of Civil Engineering

Associate Director, Kentucky Water Resources Research Institute
Assistant Director, UK Superfund Research Center

University of Kentucky
Lexington, KY 40506
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kellypennell@uky.edu

Pennell, Kelly

From: Novak, Thomas
Sent: Monday, August 13, 2018 2:27 PM
To: Pennell, Kelly
Subject: RE: Mining Engineering: Approval request for Courses in Proposed Certificate for Environmental Engineering

Kelly,

I approve of the Mining Engineering Courses included in your Environmental Engineering Certificate Proposal.

Regards,

Tom

=====
Thomas Novak, Ph.D., P.E.
Professor and Department Chair
Alliance Coal Academic Chair
Department of Mining Engineering
University of Kentucky
230 Mining & Mineral Resources Bldg
504 Rose Street
Lexington, KY 40506-0107
Phone: 859-257-3818
Fax: 859-323-1962
E-mail: Thomas.Novak@uky.edu
=====

From: Pennell, Kelly
Sent: Monday, August 13, 2018 11:32 AM
To: Sottile, Joseph; Novak, Thomas
Cc: Brandenburg, Barbara
Subject: Mining Engineering: Approval request for Courses in Proposed Certificate for Environmental Engineering

I am the director of a proposed environmental engineering certificate in the college of engineering. We are seeking University Senate approval for this new undergraduate certificate and we anticipate approximately 5-10 students/year will acquire the certificate. Some of the courses are offered by Mining Engineering, including: MNG 564/BAE 535, MNG 341, MNG 541, MNG 322, MNG 395. These course are among many other "focus area courses" from which students can choose. Attached is a memo that lists all of courses included in the certificate.

Inclusion of a specific borrowed prefix and course number in a certificate proposal requires approval by the department chair, or the director of undergraduate studies. *Per NEW, CURRENT Senate Standards, no vote by the faculty is necessary.*

Can you reply by email by Friday 8/17/2018 and let me know if you approve the inclusion of these courses for students who pursue the certificate? All of the students who pursue the certificate will be engineering degree seeking students.

Additional Information about the certificate:

The *Environmental Engineering Undergraduate Certificate* requires a student to complete a total of 12 credit hours (200-level or greater) and offers current (and incoming) degree-seeking undergraduate students in the College of Engineering a curriculum that integrates principles of engineering, biology, and chemistry with the development of sustainable solutions to environmental problems impacting ecosystem and human health. The proposed Environmental Engineering Certificate will: 1) formalize environmental engineering training taking place across various degree programs within the College of Engineering; 2) raise visibility of environmental engineering as a discipline among students, faculty and advisors; and, 3) increase cross-departmental interaction among four departments within the College of Engineering.

Please let me know if you have any questions.

Thank you,
Kelly Pennell

--

Kelly G. Pennell, PhD, PE
Gill Professor of Civil Engineering
Associate Professor, College of Engineering, Department of Civil Engineering

Associate Director, Kentucky Water Resources Research Institute
Assistant Director, UK Superfund Research Center

University of Kentucky
Lexington, KY 40506
859-218-2540
kellypennell@uky.edu

Pennell, Kelly

From: McCulley, Rebecca
Sent: Tuesday, August 14, 2018 8:07 AM
To: Pennell, Kelly; D'Angelo, Elisa
Cc: Brandenburg, Barbara
Subject: Re: Plant and Soil Science: Approval request for Courses in Proposed Certificate for Environmental Engineering

Kelly – I checked with the instructor of record for PLS 566 – Dr. Mark Coyne – and he approved inclusion of this course in your certificate. Good luck moving forward.

Rebecca

From: "Pennell, Kelly" <kellypennell@uky.edu>
Date: Monday, August 13, 2018 at 5:29 PM
To: "D'Angelo, Elisa" <edangelo@uky.edu>
Cc: "McCulley, Rebecca" <rebecca.mcculley@uky.edu>, "Brandenburg, Barbara" <barbara.brandenburg@uky.edu>
Subject: Re: Plant and Soil Science: Approval request for Courses in Proposed Certificate for Environmental Engineering

Elisa,
For Senate purposes, would you mind responding by saying that you approve the inclusion of the PLS 566 in our certificate? I need to include copies of these emails when the package goes to the next step.

Thanks so much!
Kelly Pennell

Sent from my iPhone

On Aug 13, 2018, at 5:03 PM, D'Angelo, Elisa <edangelo@uky.edu> wrote:

Perfect, that's what I thought, but wanted to make sure. Have a nice evening. Elisa

From: Pennell, Kelly
Sent: Monday, August 13, 2018 2:18 PM
To: D'Angelo, Elisa; McCulley, Rebecca
Cc: Brandenburg, Barbara
Subject: RE: Plant and Soil Science: Approval request for Courses in Proposed Certificate for Environmental Engineering

Hi Elisa,
After we obtain Senate approval, the certificate director can approve them on a case by case basis. If we eventually want to them as a permanent part of the list at some point, then I will have to just need to submit a change of program form. It shouldn't be too hard.

Thanks.
Kelly

From: D'Angelo, Elisa
Sent: Monday, August 13, 2018 1:04 PM
To: Pennell, Kelly <kellypennell@uky.edu>; McCulley, Rebecca <rebecca.mcculley@uky.edu>
Cc: Brandenburg, Barbara <barbara.brandenburg@uky.edu>
Subject: RE: Plant and Soil Science: Approval request for Courses in Proposed Certificate for Environmental Engineering

Hi Kelly, thank you for letting me know about this this certificate. I was wondering if the courses listed are hard and fast, or would there be room for flexibility as new courses are offered. If so, what would be the criteria for reviewing the appropriateness and accepting courses for this certificate? Elisa

From: Pennell, Kelly
Sent: Monday, August 13, 2018 11:22 AM
To: McCulley, Rebecca; D'Angelo, Elisa
Cc: Brandenburg, Barbara
Subject: Plant and Soil Science: Approval request for Courses in Proposed Certificate for Environmental Engineering

I am the director of a proposed environmental engineering certificate in the college of engineering. We are seeking University Senate approval for this new undergraduate certificate and we anticipate approximately 5-10 students/year will acquire the certificate. One of the courses is a Plant and Soil Science course(PLS 566). However, this course is one of three that students can choose from.

Inclusion of a specific borrowed prefix and course number in a certificate proposal requires approval by the department chair, or the director of undergraduate studies. Per NEW, CURRENT Senate Standards, no vote by the faculty is necessary.

Can you reply by email by Friday 8/17/2018 and let me know if you approve the inclusion of these courses for students who pursue the certificate? All of the students who pursue the certificate will be engineering degree seeking students. Attached is a memo that lists all of courses included in the certificate.

Additional Information about the certificate:

The *Environmental Engineering Undergraduate Certificate* requires a student to complete a total of 12 credit hours (200-level or greater) and offers current (and incoming) degree-seeking undergraduate students in the College of Engineering a curriculum that integrates principles of engineering, biology, and chemistry with the development of sustainable solutions to environmental problems impacting ecosystem and human health. The proposed Environmental Engineering Certificate will: 1) formalize environmental engineering training taking place across various degree programs within the College of Engineering; 2) raise visibility of environmental engineering as a discipline among students, faculty and advisors; and, 3) increase cross-departmental interaction among four departments within the College of Engineering.

Please let me know if you have any questions.
Thank you,
Kelly Pennell

--

Kelly G. Pennell, PhD, PE

Gill Professor of Civil Engineering
Associate Professor, College of Engineering, Department of Civil Engineering

Associate Director, Kentucky Water Resources Research Institute
Assistant Director, UK Superfund Research Center

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Lexington, KY 40506
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kellypennell@uky.edu



University of Kentucky

College of Engineering

371 Ralph G. Anderson Bldg.

Lexington, KY 40506

P: 859-257-1864

F: 859-257-5727

www.engr.uk

August 24, 2018

Kelly Pennell
Dept of Civil Engineering
College of Engineering

Dear Kelly:

This is to confirm that in support of you directing the Environmental Certificate Program, the College of Engineering will provide \$4000 this academic year to your department for your use which may include summer salary, course reduction, research supplies, student support, or travel.

Sincerely,

Kimberly W. Anderson

Kimberly W. Anderson
Associate Dean for Administration and Academic Affairs
Professor, Chemical Engineering
Director, REU Program in Bioactive Interfaces and Devices

see blue.

An Equal Opportunity University