Brothers, Sheila

From: Soult, Allison
Sent: Wednesday, April 17, 2019 2:51 PM
To: Bird-Pollan, Jennifer; Brothers, Sheila; Ett-Mims, Joanie
Cc: Cramer, Aaron
Subject: NEW USP: BSEE Electrical Engineering and PhD Electrical Engineering
Attachments: USP Proposal BSEE-PhDEE.pdf

Proposed New University Scholars Program: BSEE Electrical Engineering and PhD Electrical Engineering

This is a recommendation that the University Senate approve the establishment of a new University Scholars Program: BSEE Electrical Engineering and PhD Electrical Engineering, in the Department of Electrical and Computer Engineering within the College of Engineering.

Rationale: Demand for students with computing degrees is growing at a rate more than double the national average. The goal of the USP is to retain the most promising undergraduate students to continue into a doctoral program at UK. The proposed USP will streamline the transition of top students into the doctoral program and hopefully increase the number who complete their Ph.D. in Electrical Engineering.

Allison Soult, Ph.D.
Senior Lecturer, Director of General Chemistry
Department of Chemistry
Jacobs Science Building 261E
University of Kentucky
Lexington, KY 40506-0174
859-257-7067 (phone)

Spring 2019 Office Hours
MW 10:00-11:30 am
JSB 261M

NEW UNIVERSITY SCHOLARS PROGRAM (USP)

The University Scholars Program (USP) offers students the opportunity and challenge of integrating their undergraduate and graduate courses of study into a single, continuous program leading to both a baccalaureate and master's degree. The student's particular requirements will determine the amount of time needed to complete the program, but the two programs can be completed in less time than that required in a conventional program.

Once approved at the college level, your college will send the proposal to the Graduate Council (GC) for review and approval. (Requirements for the bachelor's degree must remain unchanged, so there is no review by the Undergraduate Council.) After approval by the GC, the GC 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 report approvals to the Provost, Registrar and other appropriate entities, including the contact person. The contact person listed on the form will be informed when the proposal has been sent to committee and other times as appropriate.

1. GENERAL INFORMATION					
1a	Bachelor's major name:	*Electrical Engineering*			
1b	Bachelor's degree:	☐ Bachelor of Arts	☐ Bachelor of Science	☒ Other	
	If "Other," explain:	B.S.E.E.			
1c	Bachelor's degree home college:	Engineering			
1d	Bachelor's degree home department/school:	Electrical and Computer Engineering			
1e	Graduate major name:	Electrical Engineering			
1f	Graduate degree:	☐ Master's of Arts	☐ Master's of Science	☐ Master's of Education	☒ Other
	If "Other," explain:	Ph.D.			
1g	Graduate degree home college:	*Engineering*			
1h	Graduate degree home department/school:	Electrical and Computer Engineering			
1i	Requested effective date:	☒ Semester after approval.	OR	☐ Specific Date[1]:	
1j	Contact person name: *Aaron Cramer*		Email: *aaron.cramer@uky.edu*	Phone: *7-9113*	
2. OVERVIEW					
2a	Provide a brief description of the proposed USP. (*300 word limit*)				

[1] University Scholars Programs 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.

	The Department of Electrical and Computer Engineering in the College of Engineering confers a Bachelor of Science in Electrical Engineering (B.S.E.E.) and a Doctor of Philosophy (Ph.D.). The B.S.E.E. requires 128 credit hours and includes courses in both electrical and computer engineering. The Ph.D. program requires 42 hours of course work. Ph.D. students are required to take three of six courses with a GPA of 3.0 or better from a set of core courses. The core courses include EE 611 (Deterministric Systems), EE 621 (Electromagnetic Fields), EE 640 (Stochastic Systems), EE 641 (Advanced Power Systems), EE 661 (Solid-State Electronics), and EE 685 (Digital Computer Structure). The USP will allow qualified students to use up to 12 hours of course work toward both their undergraduate and doctoral degrees. For those common courses, students may use 500-level EE technical elective courses, as well as other 400G-level and 500-level technical elective courses from selected upper division engineering, mathematics, statistics, computer science, physics, and other technically related fields.
2b	Explain the need (e.g. market demand). *(300 word limit)*
	The program allows us to nurture, encourage, and reward our top undergraduate students. The program will increase the quality of the graduate students within the Ph.D. program by recruiting the highest quality students from the pool of undergraduates. It also produces students who are better prepared for leadership positions in industry. It is our goal to encourage our students with the most potential to pursue the USP and to work with them to develop combined B.S.E.E. and Ph.D. plans of study that best prepare them for their intended careers.
2c	Describe the target audience. *(150 word limit)*
	The goal of the USP is to nurture and retain our most promising undergraduate students through a doctoral degree. In particular, students who are completing their junior year and have completed at least 90 hours of course work with a minimum GPA in Electrical Engineering of 3.5 and an overall GPA of at least 3.2 are the target audience.

3. Basic Requirements

3a	☒ Check to confirm that the USP is open to undergraduates with senior standing who have completed at least 90 hours of course work.		
3b	Undergraduates must have satisfied all UK Core requirements prior to applying.	Yes ☐	No ☒
	If "No," explain. (*150 word limit*)		
	The B.S.E.E. program curriculum includes two UK Core courses in the senior year: UK Core - Global Dynamics in the fall and UK Core - Statistical Inferential Reasoning in the spring. It would be difficult to require these to be completed earlier, and leaving them in the senior year will not have an impact on students' ability to be successful in the USP.		
3c	Application to the USP is at the end of the student's junior year.	Yes ☒	No ☐
	If "No," explain. (*150 word limit*)		
3d	For admission to the USP, the undergraduate GPA is greater than or equal to 3.5 in the student's major (including cross-listed courses) and 3.2 overall.	Yes ☒	No ☐
	If "No," explain. (*150 word limit*)		

3e	☒ Check box to confirm that application to the program will follow the current procedures for application to the Graduate School, subject to the conditions in questions 3a through 3d, above.
3f	☒ Check box to confirm that the USP is designed so that students will not take more than 16 credit hours per semester. (Permission to exceed that number is subject to approval by the Director of Graduate Studies and Dean of the Graduate School.)

4. Specific Course Requirements

4a	Up to twelve (12) credit hours from the bachelor's degree may be used towards the graduate degree. How many credits from the undergraduate degree will count towards the graduate degree?
	12
4b	List below the 400G- and 500-level courses in the bachelor's degree that will count towards the graduate degree. The student must be graded as a graduate student in the courses listed below for the course(s) to count towards the graduate degree.

Prefix & Number	Course Title	Credit Hrs
	EE technical electives as defined by the Undergraduate Bulletin for Electrical Enginering (500-level EE courses)	0–12
	400G- or 500-level technical electives as defined by the Undergraduate Bulletin for Electrical Engineering (courses from engineering, mathematics, statistics, computer science, physics, or other technically related fields courses selected in consultation with the undergraduate academic advisor)	0–6
	400G- or 500-level engineering/science electives as defined by the Undergraduate Bulletin for Electrical Engineering (engineering, physics, computer science, or math course)	0–6
	400G- or 500-level math/statistics elective as defined by the Undergraduate Bulletin for Electrical Engineering (mathematics or statistics course)	0–3
	TOTAL NUMBER OF CREDIT HOURS:	12

4a.	Does the USP involve prerequisite courses[2] or concurrent enrollment[3] in certain courses?	Yes ☐	No ☒
	If "Yes," please list the courses below.		

Prefix & Number	Course Title	Credit Hrs	Course Type[4]
			Select one....

[2] Prerequisite courses are completed prior to initiation of the USP, i.e. at the undergraduate level.
[3] Concurrent enrollment courses are in progress, i.e. in which the student is be currently enrolled.
[4] Use the drop-down list to indicate if the course is a prerequisite or may be taken currently.

			Select one....
			Select one....
			Select one....
			Select one....
			Select one....
			Select one....
			Select one....
			Select one....
			Select one....

4b	Provide the Bulletin language for prerequisite or concurrent enrollment courses.

5. ADMINISTRATION AND ASSESSMENT

5a	Describe how the proposed USP will be administered, including admissions, student advising, retention, etc. *(150 word limit)*
	In their junior year, students pursuing a B.S.E.E. who meet the following criteria may apply to the B.S.E.E./Ph.D. USP. (1) The student must have completed at least 90 hours of course work. (2) The applicant must have a GPA in Electrical Engineering of at least 3.5 and an overall GPA of at least 3.2. (3) The student must meet the admission standards of the UK Graduate School and the Ph.D. program. Students will be advised by their undergraduate advisors for the portion of the USP work that applies to the requirements for their B.S.E.E. as well as the Director of Graduate Studies for the Ph.D. program for their Ph.D. plan of study and course selection.
5b	Describe evaluation procedures for the proposed USP. Include how to determine whether the USP is a success or a failure. *(250 word limit)*
	The B.S.E.E./Ph.D. USP will be reviewed annually by the Chair of the Electrical and Computer Department, the Director of Graduate Studies for the Ph.D. program, and the Director of Undergraduate Studies for the B.S.E.E. program. The success or failure of the proposed program will be evaluated based on (1) the number of students applying to the program, (2) the number of students successfully completing the program, and (3) the relative quality of the students participating in the USP compared to the overall cohort of Ph.D. students as well as cohorts of Ph.D. students that received B.S.E.E. degrees and pursued Ph.D. degrees but that did no participate in the USP. The relative quality of the student cohorts will be based on GPA and rubrics applied to their Ph.D. qualifying exam, final exam, and annual reviews.

6. MISCELLANEOUS

6a	Is there anything else about the proposed USP that should be mentioned? *(150 word limit)*

7. APPROVALS/REVIEWS

Document steps in the approval process below.

	Reviewing Group Name	**Date Approved**	**Contact Person Name/Phone/Email**

7a	(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 heads reporting department- and college-level votes.*			
	ECE Faculty	*10/12/2018*	*Mike Johnson / 7-0717 / mike.johnson@uky.edu*	
			/ /	
			/ /	
			/ /	
7b	(Collaborating and/or Affected Units)			
			/ /	
			/ /	
			/ /	
			/ /	
7c	(Senate's Academic Councils)		**Date Approved**	**Contact Person Name**
	Health Care Colleges Council (if applicable)			
	Graduate Council		2/22/19	Roshan Nikou

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

January 28, 2019

To Whom It May Concern:

This letter is to confirm that the faculty of the College of Engineering has reviewed and approved the attached proposal for University Scholars, BSEE-Ph.D.EE. The faculty reviewed the proposal documents via email and there were no concerns raised.

If you have any questions, please contact me.

Sincerely,

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