

TO: Dr. Ernest Yanarella

FROM: Jeannine Blackwell, Dean
The Graduate School

The Graduate Council met on March 23 and approved the new program University Scholars between Biosystems and Biomedical Engineering.

Brothers, Sheila C

From: Mendiondo, Marta
Sent: Monday, November 17, 2008 12:22 PM
To: Brothers, Sheila C
Cc: Mendiondo, Marta
Subject: Senate Academic Programs Committee Meeting Nov 14th

Sheila,

The Senate Academic Programs Committee approved the following programs, assuming all necessary routing sheets are available:

BS in Biosys / MS Biomed Engr USP

Tx,
Marta

Marta S. Mendiondo, PhD
University of Kentucky College of Public Health - Biostatistics Department
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PROPOSAL

A University Scholars Program for an MS in Biomedical Engineering combined with a BS in Biosystems and Agricultural Engineering.

BACKGROUND

The MS in Biomedical Engineering (MSBME) is a multi-disciplinary program offered by the Center for Biomedical Engineering at the University of Kentucky. The MSBME program is available as a thesis option (Plan A) requiring 26 hours of course work, or as a project option (Plan B) requiring 33 hours of course work. The Biomedical Engineering program is a graduate degree only program: The University of Kentucky does not offer an undergraduate degree in Biomedical Engineering. The University of Kentucky's College of Engineering offers a 4-year, 132 credit-hour Bachelor of Science degree in Biosystems and Agricultural Engineering which includes a pre-biomedical engineering track. The undergraduate program is accredited by the Accreditation Board of Engineering and Technology (ABET). This document proposes the establishment of a University Scholars program for the Biomedical Engineering program. The program would be restricted to students who are pursuing a BS in Biosystems and Agricultural Engineering and concentrating in pre-biomedical engineering. The program is intended to appeal to students who are studying Biosystems and Agricultural Engineering at UK as an undergraduate, and who seek an advanced degree in Biomedical Engineering.

PROGRAM STRUCTURE

Admissions: A student desiring admission into the MSBME University Scholars program is required to meet the following requirements: 1) The applicant must be an undergraduate pursuing a BS degree in Biosystems and Agricultural Engineering and concentrating in pre-biomedical engineering. 2) The applicant should apply for the MSBME University Scholars program at the end of his/her junior year. 3) The applicant must have senior standing (completed at least 90 hours of course work) and have completed all University Studies requirements. 4) The applicant must have an overall grade-point average of 3.2 or above on a 4.0 scale, and a grade-point average of 3.5 or above in the undergraduate major. 5) The applicant must follow the current application procedures for the Graduate School, and must meet the admission standards of the Graduate School and the MSBME program.

PROGRAMS OF STUDY

One of the criterion used for admission into the MSBME program is that at least one faculty member in BME agrees to serve as a graduate research advisor for an applicant. Upon admission to the program, the graduate research advisor in the Center for Biomedical Engineering will advise students regarding their participation in the dual degree program and in their graduate coursework. The students' undergraduate departmental advisors will advise on undergraduate coursework. Currently, University Scholars and elective courses constitute some of the required hours for completion of a BS degree in Biosystems and Agricultural Engineering.

Dual degree with BS in Biosystems and Agricultural Engineering and MS in Biomedical Engineering: Under the dual degree program, the total number of credit hours completed for the

combined program may be twelve (12) fewer than the total required for both the bachelor's and the master's degrees. The requirements for the bachelor's and the MSBME degrees remain unchanged, however, prospective students in the dual program will share up to 13 credits for both degrees. In order for these 13 credits to satisfy the requirements of the BS and the MS degrees, a student will select technical electives in the fourth year of study in consultation with the undergraduate advisor in Biosystems and Agricultural Engineering as well as the director of graduate studies in Biomedical Engineering such that the selected electives meet the requirements of both programs.

Example: A student in the fourth (senior) year of his/her undergraduate curriculum would choose the following courses in lieu of the free and technical electives:

Course	Credits
1) BME530 Biomedical Instrumentation	3
2) PGY412G Principals of Human Physiology	4
3) One of the following BAE502 (modeling of Bio Systems), BCH401G (fundamentals of Biochem), CME599 (topics in Chemical Engineering: Biochemical Engineering), ME501 (mechanical design with finite element methods), MSE404G (polymeric materials), MSE554 (chemical and physical processing of polymer systems).	3
4) STA580 Biostatistics I	3
Total	13*

*These 13 credits are shared between the undergraduate and the graduate curriculum

In the first semester as a graduate student in the BME program (Fall) the student would take

1) BME605 Biomedical Signal Processing I	3
2) BME 672 Musculoskeletal Mechanics or BME 670 Bio-solid Mechanics	3 3
3) BME661 Biomaterial Science and Engineering	3

In the second semester the student would take

1) BME781/699 Special topics/problems in Biomed Engr	3
2) BME774 Graduate Biomed Engr Seminar	1

It is expected that the student will have started working on a thesis in the first semester as a graduate student in BME, with virtually entire effort focused on completion of the research for thesis in the second and the third semesters. It is the expectation that students in this program may be able to complete the requirements for an MS degree within three semesters and one summer. The plan B option, which is a Master's degree in BME with a project instead of a thesis, will not be offered for students who join the BME program via this University Scholars program.



UNIVERSITY OF KENTUCKY

0506-1013

November 9, 2005

Office of the Dean

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Dean Jeannine Blackwell
Graduate School
Gillis Building

Dear Dean Blackwell:

The College of Engineering supports the University Scholars Program between undergraduates in the Biosystems and Agricultural Engineering program and the Biomedical Engineering masters program.

Please feel free to contact me if you need additional information.

Sincerely,

Donn E. Hancher, Ph.D., P.E.
Associate Dean for Administration
and Academic Affairs



UNIVERSITY OF KENTUCKY

College of Agriculture

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Engineering Department
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August 7, 2008

Dr. Jeannine Blackwell, Dean
The Graduate School
351 Patterson Office Tower
CAMPUS 0027

Dear Dean Blackwell:

Please accept this letter as verification of my support for the proposed University Scholars Program combining the B.S. in Biosystems and Agricultural Engineering with the M.S. in Biomedical Engineering. This joint University Scholars program will provide an attractive option for our strong undergraduate students who select the pre-biomedical engineering option from our curriculum, and are interested in graduate study in Biomedical Engineering.

In my estimation the University Scholars program will be beneficial to the Department of Biosystems and Agricultural Engineering because it will give our some of our stronger students an opportunity to participate in the University Scholars program. Further, this joint program will benefit the Center for Biomedical Engineering as it represents another vehicle to retain our best and brightest young scholars for graduate study. Without qualification I support approval of the proposed University Scholars program.

Sincerely,

A handwritten signature in black ink, appearing to read 'Scott A. Shearer'.

Scott A. Shearer, Ph.D., P.E.
Professor and Chair



UNIVERSITY OF KENTUCKY

The Graduate School

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August 8, 2008

Jeannine Blackwell, Ph.D.
Dean, The Graduate School
102 Gillis Building
Campus 0033

Dear Dean Blackwell:

This letter is in support for the proposed University Scholars Program that combines the B.S. in Biosystems and Agricultural Engineering with the M.S. in Biomedical Engineering. The Center's faculty unanimously approved the proposal.

We believe this program will benefit the University by retaining bright undergraduate engineers for graduate studies and allowing them to pursue biomedical engineering in the absence of a B.S. program in the discipline. Furthermore, the University Scholars Program will be of advantage to the Center by facilitating enrollment of strong undergraduate engineers in our graduate program.

Sincerely,

David Puleo, Ph.D.
Professor and Director

July 14, 2005

The Graduate School
University of Kentucky
351 Patterson Office Tower
Lexington, KY 40546-0027

Dear Dean Blackwell:

This letter represents my support for the proposed University Scholars Program combining the Bachelor of Science in Biosystems and Agricultural Engineering with the Master of Science in Biomedical Engineering. This University Scholars program with Biomedical Engineering would provide an option for our strong undergraduate students who select the pre-biomedical engineering option from our curriculum and are interested in graduate study in Biomedical Engineering.

This University Scholars program will be beneficial to both the Department of Biosystems and Agricultural Engineering because it will give our strong pre-biomedical students an opportunity to participate in the University Scholars program, and it will be beneficial to the Center for Biomedical Engineering because this program will be another vehicle to retain our bright young students in Kentucky for graduate school.

Sincerely,

Richard S. Gates
Professor and Chair