APPROVED BY SENATE
05/01/2017

EP.17.77 FINAL

ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Proposal to the Senate Educational Policy Committee

PROPOSAL TITLE: Revision to Undergraduate Curriculum in the Department of Materials Science and Engineering, College of Engineering

SPONSOR: Paul Braun, Ivan Racheff Professor of MatSE, 217-244-7293, pbraun@illinois.edu

COLLEGE CONTACT: Kevin Pitts, Associate Dean for Undergraduate Programs, 217-333-3946, kpitts@illinois.edu

BRIEF DESCRIPTION: This revision to the requirements for the Bachelors of Science of Materials Science and Engineering removes the concentration structure from the department except for the biomaterials concentration, and replaces it with a more flexible approach where the students select technical courses from a list provided by the department to develop a depth of knowledge in focus areas of materials science. Although all concentrations will be eliminated, the biomaterials curriculum will be retained as less-flexible focus area, as it is tightly structured to both satisfy ABET requirements and the requirements for students interested in attending medical school.

JUSTIFICATION: The field of Materials Science is dynamic, and the current curriculum, which was formulated in ~1990, has a very static structure consisting of 5 concentrations, with a set of course requirements for each concentration that cannot be changed without a proposal to the Senate Educational Policy Committee. As such, the curriculum has not been able to evolve with the field. Areas such as computational materials science and engineering, materials for energy, nanomaterials, and composites could not be properly taught under the old structure. This new structure enables the department to offer technically rigorous series of courses in areas of importance (defined as “focus areas”). Under the revised curriculum, the students will still be required to take the same rigor of courses, but with more flexibility in the course topics. One may ask why we simply do not add more concentrations. The answer simply is that a formal concentration structure does not enable the department to be nimble to adapt to changes in the field and/or changes in the faculty makeup of the department. By the time a new concentration is added, and becomes a formal requirement for a student, ~3 years will have passed. When we discussed the new proposed curriculum and the current curriculum with our Alumni board, the Alumni board did not see it being an advantage for a student to list a formal concentration on their transcript, and that listing a concentration might even be a disadvantage, as it may reduce the probability a student will be considered for a position in “Materials”, but outside their concentration. In summary, the advantages of a “concentration” structure are few, and the disadvantages are many, which has led to this proposal.

Note that the Biomaterials focus area (previously Concentration) has two MSE courses required for all other students (MSE 304 and 405) removed and replaced with Organic Chemistry and three Biology courses; to retain ABET approval it has been and will be required that students interested in the Biomaterials focus area replace those two courses with sufficient senior technical electives with appropriate engineering content. Thus, the Biomaterials focus area has a more specified set of courses listed, that reflect the previously approved curriculum for Biomaterials students, and remains unchanged in the modification to the curriculum. We anticipate no problems with ABET accreditation for the entire program or the Biomaterials focus area specifically.

PROCESS:

Over the 2013-2014 academic year, the MatSE curriculum committee was charged by the MatSE department head to evaluate the current undergraduate materials curriculum with a particular goal of determining how and if the curriculum should be updated to make it more responsive to changes in the field of Materials Science and Engineering, changes in the makeup of the faculty, and changes in the interests of the undergraduate students over the last 25 years. As noted above, the current curriculum is rigid, and does not allow for changes in the course requirements for graduation. To benchmark our efforts, the curriculum committee surveyed the undergraduate curriculum of about 15 other departments of Materials Science and Engineering, and noted that about half required specific concentrations, matching the current model at Illinois, and about half had a more open program of study. The curriculum committee then developed the curriculum plan described here, and in September of 2014, presented it to the faculty of the MatSE Department, and the MatSE Department Alumni Board. The faculty and Alumni Board each discussed the plan and made suggestions. The curriculum committee revised the proposed curriculum in response to the input from the Alumni Board and MatSE faculty, and then presented the plan to the MatSE faculty in November 2014. At a faculty meeting, the MatSE faculty unanimously approved the plan for a new undergraduate curriculum. From January 2015-May 2016, the MatSE department lay the groundwork for the new curriculum. Most important in this process was the development of a new flexible senior laboratory course. This course was approved in Spring 2016, and under the new curriculum plan will replace the senior labs in each concentration.

BUDGETARY AND STAFF IMPLICATIONS:

1) Resources
    a. How does the unit intend to financially support this proposal?
    We do not expect this proposal to affect the total number of IUs offered by the department in the undergraduate program.
    b. How will the unit create capacity or surplus to appropriately resource this program? If applicable, what functions or programs will the unit no longer support to create capacity?
    No new resources will be required. Should the department determine a course is needed in a specific area, a course that is no longer as relevant will be discontinued.
    c. Will the unit need to seek campus or other external resources? If so, please provide a summary of the sources and an indication of the approved support.
    No. See 1a and 1b.

d. Please provide a letter of acknowledgment from the college that outlines the financial arrangements for the proposed program.
N/A

2) Resource Implications
   a. Please address the impact on faculty resources including the changes in numbers of faculty, class size, teaching loads, student-faculty ratios, etc.
   The number of courses we teach as a department will remain about the same, and the total number of the students about the same, so impacts on faculty resources will be minimal.
   b. Please address the impact on course enrollment in other units and provide an explanation of discussions with representatives of those units.
   None.
   c. Please address the impact on the University Library.
   None
   d. Please address the impact on technology and space (e.g. computer use, laboratory use, equipment, etc.)
   None.

For new degree programs only:

3) Briefly describe how this program will support the University's mission, focus, and/or current priorities. Include specific objectives and measurable outcomes that demonstrate the program's consistency with and centrality to that mission.
4) Please provide an analysis of the market demand for this degree program. What market indicators are driving this proposal? What type of employment outlook should these graduates expect? What resources will be provided to assist students with job placement?
5) If this is a proposed graduate program, please discuss the programs intended use of waivers. If the program is dependent on waivers, how will the unit compensate for lost tuition revenue?

DESIRED EFFECTIVE DATE: Fall 2017

STATEMENT FOR PROGRAMS OF STUDY CATALOG: See attachment.

CLEARANCES: *(Clearances should include signatures and dates of approval.* ***These signatures must appear on a separate sheet.*** *If multiple departments or colleges are sponsoring the proposal, please add the appropriate signature lines below.)*

Signatures:

Unit Representative:	Date: Feb. 17, 2017
College Representative:	Date: 3-2-2017
Graduate College Representative:	Date:
Council on Teacher Education Representative:	Date:

Appendix A:
(Proposed Curriculum Revisions)

Current Requirements:	Current Hours	Revised Requirements:	Revised Hours
Major Core Requirement		***Major Core Requirement***	
MSE 401 – Thermodynamics of Materials	4 Hours	MSE 401 – Thermodynamics of Materials (note, change in hours from 4 to 3 already approved)	3 Hours
Area intro course (e.g. MSE 450 – Introduction to Polymers)	3 Hours	Topical lecture (suggested to be 400-level intro course) from list published by the MatSE department)	3 Hours
400-level area specialty courses	6 Hours	Topical lectures from list published by the MatSE department)	6 Hours
Other area specialty course	3 Hours	MSE 404	3 Hours
400-level area specialty course	3 Hours	Topical lecture from list published by the MatSE department)	3 Hours
400-level area elective	3 Hours	MSE 404	3 Hours

See also the attached current and proposed curriculum maps.

http://catalog.illinois.edu/undergraduate/engineer/departments/mtse/

David G. Cahill

201 Materials Science and Engineering Building, 1304 West Green, Urbana
PH: (217) 333-1441
FX: (217) 333-2736

http://matse.illinois.edu

Curriculum in Materials Science and Engineering

For the Degree of Bachelor of Science in Materials Science and Engineering

Materials science and engineering is the basis for all engineering. Improvements in the quality of life require knowledge of the processing and properties of current materials and the design, development and application of new materials. The Materials Science and Engineering (MatSE) curriculum provides an understanding of the underlying principles of synthesis, design and processing of materials and of the interrelationships between structure, properties, and processing. Students learn how to create advanced materials and systems required, e.g., for flexible electronic displays and photonics that will change communications technologies, for site specific drug delivery, for self-healing materials, for enabling the transition to a hydrogen-based economy, and for more efficient photovoltaics and nuclear systems for energy production. The curriculum uses concepts from both basic physics and chemistry and provides a detailed knowledge of what makes the materials we use every day behave as they do.

Students in the first two years take courses in general areas of science and engineering as well as courses introducing the concepts in MatSE. In the third year, students study the common, central issues related to MatSE. In the senior year, students focus on an area of MatSE of their greatest interest, providing them with the detailed knowledge to be useful to corporations, become entrepreneurs, or to provide the underpinning knowledge for graduate study. Note: students interested in biomaterials take a specific set of courses to provide them with a background in biology and chemistry while maintaining a strong engineering focus.

A combined B.S.-M.S. Materials Science and Engineering degree program is available. Its admission and course requirements are described in the College of Engineering program information section and the department website.

Focus Areas

The MatSE program provides a diverse set of courses enabling a plan of study designed around the interests of the student. The plan of study includes the core areas of materials science (ceramics, metals, polymers, electronic materials, and biomaterials), as well as emerging interdisciplinary topics (e.g., materials for energy, advanced processing and/or characterization methods, materials theory and computation). The biomaterials area requires a unique set of prerequisites and courses, and so has a distinct required curriculum. Students are encouraged to take engineering, science, and business electives of interest and relevance to their career goals. Highlights of possible focus areas are:

- Advanced Processing and Characterization Methods: Introduces principles for designing and engineering materials structure, properties and chemistry from atomic to macroscopic scales. This area also teaches fundamental and practical concepts necessary for determining materials structure and chemistry at different length scales. This area utilizes basic knowledge from physics and chemistry.
- Biomaterials: The science and engineering of materials for use in biological applications, particularly as related to human health. This area includes concepts in basic and intermediate

chemistry and basic and intermediate biology concepts, with relatively less coverage of physics topics. It includes a subset of the standard junior year courses and requires additional chemistry and biology in the junior year.

- Composites: Studies the science and engineering of materials formed by combining multiple materials into a single material. Studies of composites make significant use of physical properties of materials and mathematical knowledge.
- Ceramics: Studies the science and engineering of ceramic materials, including alloy design, composites, synthesis, and processing methods. Ceramics makes significant use of concepts from both basic physics and basic chemistry.
- Electronic Materials: Describes the design and engineering of materials primarily for the microelectronics industries. Topics span the ceramics, metals, and polymers areas. Concepts from basic and intermediate physics are used along with basic chemistry.
- Metals: Introduces the design and processing of metals and alloys to achieve desired properties. This area primarily uses concepts from basic and intermediate physics with relatively less emphasis on chemical concepts.
- Polymers: Teaches the methods for molecular design to achieve desired properties in individual polymers, polymer blends, and polymer composites as well as processing methods. This area primarily uses concepts from basic and intermediate chemistry with relatively less emphasis on physics concepts.
- Materials for Energy and the Environment: Studies materials for energy production, harvesting, and storage, materials for environmental remediation, water purification, and recycling, and includes discussions on sustainability and life-cycle analysis of the environmental impact of materials. Materials issues related to both renewable and non-renewable energy production are covered. This area utilizes concepts from both physics and chemistry.
- Materials Theory and Computation: Introduces computational modeling approaches for materials that span length- and time-scales from the atomic to the macroscopic. This area focuses on computational prediction of material response to different stimuli (mechanical loads, temperature, electronic excitations, etc.) and fundamental material properties.

Overview of Curricular Requirements

The curriculum requires 128 hours for graduation and is organized as follows.

Orientation and Professional Development

These courses introduce the opportunities and resources your college, department, and curriculum can offer you as you work to achieve your career goals. They also provide the skills to work effectively and successfully in the engineering profession.

ENG 100	Engineering Orientation [1]	0
MSE 183	Freshman Materials Laboratory [1,2]	1
Total Hours		**1**

[1] *External transfer students take ENG 300 instead.*

[2] *This optional course is highly recommended for freshmen and may be used to help meet free elective requirements.*

Foundational Mathematics and Science

These courses stress the basic mathematical and scientific principles upon which this engineering discipline is based.

CHEM 102	General Chemistry I	3
CHEM 103	General Chemistry Lab I	1
CHEM 104	General Chemistry II	3
CHEM 105	General Chemistry Lab II	1
MATH 221	Calculus I [1]	4
MATH 225	Introductory Matrix Theory	2
MATH 231	Calculus II	3
MATH 241	Calculus III	4
MATH 285	Intro Differential Equations	3
PHYS 211	University Physics: Mechanics	4
PHYS 212	University Physics: Elec & Mag	4
PHYS 214	Univ Physics: Quantum Physics	2
Total Hours		**34**

[1] *MATH 220 may be substituted, with four of the five credit hours applying toward the degree. MATH 220 is appropriate for students with no background in calculus.*

Materials Science and Engineering Technical Core

These courses stress fundamental concepts and basic laboratory techniques that comprise the common intellectual understanding of materials science and engineering.

For All Students

CS 101	Intro Computing: Engrg & Sci	3
ECE 205	Elec & Electronic Circuits	3
IE 300	Analysis of Data [1]	3
or STAT 400	Statistics and Probability I	
MSE 182	Introduction to MatSE	2
MSE 201	Phases and Phase Relations	3

MSE 206	Mechanics for MatSE	4
MSE 307	Materials Laboratory I	3
MSE 308	Materials Laboratory II	3
MSE 395	Materials Design	3
MSE 401	Thermodynamics of Materials	3
MSE 402	Kinetic Processes in Materials	3
MSE 406	Thermal-Mech Behavior of Matls	3
Total Hours		**36**

[1] *The replacement of IE 300 with STAT 400 is not allowed for students in the Biomaterials Area unless one of their area or technical electives is deemed by ABET (Accreditation Board for Engineering and Technology) to be an engineering course. The extra hour of credit for STAT 400 may be used to help meet free elective requirements.*

- For the Biomaterials Area

CHEM 232	Elementary Organic Chemistry I	3 OR 4
MCB 150	Molec & Cellular Basis of Life	4
MCB 450	Introductory Biochemistry	3
MCB 252	Cells, Tissues & Development	3
Subtotal		13
Total for the Biomaterials Area		**49**

- For All Other Areas

MSE 304	Electronic Properties of Matls	3
MSE 405	Microstructure Determination	3
Subtotal		6
Total for all non-Biomaterials Students		**42**

Technical Electives

These courses stress the rigorous analysis and design principles practiced in the major subdisciplines of materials science and engineering embodied in the MatSE focus areas.

For the Biomaterials Area

Biomaterials area topical lectures selected from the list of topical lectures established by the department. [1]		5
MSE 404	Materials Laboratories	3
MSE 470	Design and Use of Biomaterials	3
Topical lectures outside the biomaterials area.		6
Total Hours		**17**

[1] *Topical Lectures.*

For All Other Areas

Topical lectures selected from the list of courses established by the department. No more than 6 hours may be from introductory topical lectures. [1]		12
MSE 404	Materials Laboratories	6
Technical electives selected from the list of approved technical electives established by the department. [2]		6
Total Hours		**24**

[1] *Topical Lectures.*

[2] *List of approved technical electives.*

Liberal Education

The liberal education courses develop students' understanding of human culture and society, build skills of inquiry and critical thinking, and lay a foundation for civic engagement and lifelong learning.

Electives from the campus General Education social & behavioral sciences list.	6
Electives from the campus General Education humanities & the arts list.	6
Electives either from a list approved by the college, or additional courses from the campus General Education lists for social & behavioral sciences or humanities & the arts.	6
Total Hours	**18**

Students must also complete the campus cultural studies requirement by completing (i) one western/comparative culture(s) course and (ii) one non-western/U.S. minority culture(s) course from the General Education cultural studies lists. Most students select liberal education courses that simultaneously satisfy two or more cultural studies requirements. Courses from the western and non-western lists that fall into free electives or other categories may also be used satisfy the cultural studies requirements.

Composition

These courses teach fundamentals of expository writing.

RHET 105	Writing and Research	4
Advanced Composition (satisfied by completing the sequence MSE 307 + MSE 308 in the Materials Science and Engineering Technical Core)		
Total Hours		**4**

Free Electives

These unrestricted electives, subject to certain exceptions as noted at the College of Engineering advising website, give the student the opportunity to explore any intellectual area of unique interest. This freedom plays a critical role in helping students to define research specialties or to complete minors.

Free electives. Additional unrestricted course work, subject to certain exceptions as noted at the College of Engineering advising Web site, so that there are at least 128 credit hours earned toward the degree. [1]	6

[1] *College of Engineering advising website*

Topical Lecture Courses

The courses listed below have been approved by the department as topical lectures for all focus areas.

Biomaterials Area		
MSE 470	Design and Use of Biomaterials	3
Topical Lectures [1]		5
All Other Areas		
MSE 420	Ceramic Materials & Properties	3
MSE 421	Ceramic Processing	3
MSE 422	Electrical Ceramics	3
ECE 340	Semiconductor Electronics	3
MSE 460	Electronic Materials I	3
MSE 461	Electronic Materials II	3
MSE 440	Mechanical Behavior of Metals	3
MSE 441	Metals Processing	3
MSE 443	Design of Engineering Alloys	3
MSE 450	Polymer Science & Engineering	3

MSE 453	Plastics Engineering	3
Area technical electives [1]		3-6

[1] *Selected from the departmental list of approved area technical electives for focus areas.*

Suggested Sequence

The schedule that follows is illustrative, showing the typical sequence in which courses would be taken by a student with no college course credit already earned and who intends to graduate in four years. Each individual's case may vary, but the position of required named courses is generally indicative of the order in which they should be taken. The first two years of the Suggested Sequence is the same for all MatSE students. The third and fourth years vary with the Focus Area chosen. Refer to the appropriate third and fourth year sequence.

First Year

First Semester		**Hours**
CHEM 102	General Chemistry I	3
CHEM 103	General Chemistry Lab I	1
ENG 100	Engineering Orientation	0
MATH 221	Calculus I	4
MSE 182	Introduction to MatSE	2
RHET 105 (or Liberal education elective)[2,3]	Writing and Research	4
	Semester Hours	**14**

Second Semester

CHEM 104	General Chemistry II	3
CHEM 105	General Chemistry Lab II	1
MATH 225	Introductory Matrix Theory	2
MATH 231	Calculus II	3
MSE 183[4]	Freshman Materials Laboratory	1
PHYS 211	University Physics: Mechanics	4
RHET 105 (or Liberal education elective)[2,3]	Writing and Research	4

	Semester Hours	**17**

Second Year

First Semester

CS 101	Intro Computing: Engrg Sci	3
MATH 241	Calculus III	4
MSE 201	Phases and Phase Relations	3
PHYS 212	University Physics: Elec Mag	4
Liberal education elective[3]		3
	Semester Hours	**17**

Second Semester

ECE 205	Elec Electronic Circuits	3
MATH 285	Intro Differential Equations	3
MSE 206	Mechanics for MatSE	4
PHYS 214	Univ Physics: Quantum Physics	2
Liberal education elective[3]		3
	Semester Hours	**15**
	Total Hours:	**63**

All students except Biomaterials Area

Third Year

First Semester		**Hours**
IE 300 or STAT 400[5]	Analysis of Data	3
MSE 307[6]	Materials Laboratory I	3
MSE 401	Thermodynamics of Materials	3
MSE 406	Thermal-Mech Behavior of Matls	3

Liberal education elective[3]		3
	Semester Hours	**15**

Second Semester

MSE 304	Electronic Properties of Matls	3
MSE 308[6]	Materials Laboratory II	3
MSE 402	Kinetic Processes in Materials	3
MSE 405	Microstructure Determination	3
Topical Lecture (Intro Level Suggested)		3
Liberal education elective[3]		3
	Semester Hours	**18**

Fourth Year

First Semester

Topical Lecture		3
Topical Lecture		3
MSE 404		3
Technical elective[9]		3
Liberal education elective[3]		3
Free elective		3
	Semester Hours	**18**

Second Semester

MSE 395	Materials Design	3
MSE 404		3
Topical Lecture		3
Technical elective[9]		3

Free elective		3
	Semester Hours	**15**
	Total Hours:	**66**

Biomaterials Area

Third Year

First Semester		Hours
CHEM 232	Elementary Organic Chemistry I	3 OR 4
MSE 406	Thermal-Mech Behavior of Matls	3
MSE 401	Thermodynamics of Materials	3
MSE 307[6]	Materials Laboratory I	3
MCB 150	Molec Cellular Basis of Life	4
	Semester Hours	**16**

Second Semester

MCB 252	Cells, Tissues Development	3
IE 300 or STAT 400[5]	Analysis of Data	3
MSE 402	Kinetic Processes in Materials	3
MSE 308[6]	Materials Laboratory II	3
Liberal education elective[3]		3

	Semester Hours	**15**

Fourth Year

First Semester

MSE 470	Design and Use of Biomaterials	3
MCB 450	Introductory Biochemistry	3
Topical lecture in biomaterials area		2
Topical lecture outside of biomaterials area		3
Liberal education elective[3]		3
Free Elective		3
	Semester Hours	**17**

Second Semester

MSE 404	Materials Laboratories	3
MSE 395	Materials Design	3
Topical lecture in biomaterials area		3
Topical lecture outside of biomaterials area		3
Liberal education elective[3]		3
Free elective		3
	Semester Hours	**18**
	Total Hours:	**66**

[1] *MATH 220 may be substituted, with four of the five credit hours applying toward the degree. MATH 220 is appropriate for students with no background in calculus.*

[2] *RHET 105 may be taken in the first or second semester as authorized. The alternative is a social sciences or humanities elective.*

[3] *Liberal education electives must include 6 hours of social & behavioral sciences and 6 hours of humanities & the arts course work from the campus General Education lists. The remaining 6 hours may be selected from a list maintained by the college, or additional course work from the campus General Education lists for social & behavioral sciences or*

humanities & the arts. Students must also complete the campus cultural studies requirement by completing (i) one western/comparative culture(s) course and (ii) one non-western/U.S. minority culture(s) course from the General Education cultural studies lists. Most students select liberal education courses that simultaneously satisfy these cultural studies requirements. Courses from the western and non-western lists that fall into free electives or other categories may also be used satisfy the cultural studies requirements.

[4] *This course is highly recommended for freshmen, who may use it to help meet free elective requirements.*

[5] *Satisfies the General Education Advanced Composition requirement.*

[6] *The replacement of IE 300 with STAT 400 is not allowed for Biomaterials Area students in the unless one of their area or technical electives is deemed by ABET to be an engineering course. The extra hour of credit for this course may be used to help meet free elective requirements.*

[7] *To be selected from list of area specialty course established by the department to provide an acceptable level of study in the student's chosen focus area.*

[8] *During fourth year, strongly recommended is incorporation of one or more of an internship, co-op position, and a research project during summers or an academic semester, or both. For students who intend to continue in graduate school, recommended additionally is the undertaking of a research project (Senior Thesis) in the senior year. The project may take the place of 4-6 hours of free, technical, or area specialty electives.*

[9] *Selected from the departmental list of approved technical electives.*

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Office of the Provost and Vice Chancellor for Academic Affairs

Swanlund Administration Building
601 East John Street
Champaign, IL 61820

March 7, 2017

Bettina Francis, Chair
Senate Committee on Educational Policy
Office of the Senate
228 English Building, MC-461

Dear Professor Francis:

Enclosed is a copy of a proposal from the College of Engineering to revise the Bachelor of Science in Materials Science and Engineering.

Sincerely,

Kathryn A. Martensen
Assistant Provost

Enclosures

c: M. Hirschi
P. Braun
R. Willoughby

From: McKinney, Allison Ann
To: Hirschi, Michael C
Cc: McElroy, Rhonda Kay; Willoughby, Robin A; Martensen, Kathy
Subject: RE: MatSE curriculum proposal
Date: Monday, March 6, 2017 11:13:22 AM

Hello All,

This one can go straight to Kathy, it doesn't impact the MS curriculum at all so we don't need to sign off.

Thanks!

Allison McKinney
Director
Academic Affairs
Graduate College

From: Hirschi, Michael C
Sent: Thursday, March 2, 2017 11:06 AM
To: McKinney, Allison Ann <agrindly@illinois.edu>
Cc: McElroy, Rhonda Kay <rmcelroy@illinois.edu>; Willoughby, Robin A <robinw@illinois.edu>; Martensen, Kathy <kmartens@illinois.edu>
Subject: MatSE curriculum proposal

Allison -

This has moved much slower than I like, but I now have the most recent version of the MatSE proposal, in Senate EdPol format, with a signature page started (pdf version). It is attached, both in Word and pdf. I will print the signature page and carry to each office that needs to sign to get a final version for submission through the Provost's office. I am cc'ing Kathy Martensen so she knows where things are.

If there is already a signature page out there, please let me know, but I think this is it.

Please let me know when I should get the signature page to you.

Thanks,

Mike

Michael C. Hirschi, Ph.D., P.E.
Academic Advisor and former Assistant Dean – Undergraduate Programs
Professor Emeritus of Agricultural and Biological Engineering
College of Engineering
University of Illinois at Urbana-Champaign

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

College of Engineering

Executive Committee
306 Engineering Hall, MC-266
1308 West Green Street
Urbana, IL 61801

March 3, 2017

Associate Dean John Hart
Graduate College
204 Coble Hall
MC-322

Via: Andreas Cangellaris, Engineering College

Dear Dean Hart:

The College of Engineering Executive Committee has reviewed and approved the following program revision. We now submit for campus approval.

"Revision to Undergraduate Curriculum in the Department of Materials Science and Engineering, College of Engineering"

Attached is a copy of the request.

Sincerely yours,

David Padua

David Padua, Vice Chair
Executive Committee

Approval Recommended:

3-2-2017

Andreas Cangellaris, Dean
College of Engineering

Date

Mike Hirschi
Kevin Pitts
Rhonda McElroy
David Padua

telephone 217-333-2151 • *fax* 217-244-7705