



**SOUTH DAKOTA BOARD OF REGENTS**  
**ACADEMIC AFFAIRS FORMS**  
**Substantive Program Modification Program**

<b>UNIVERSITY:</b>	<b>University of South Dakota, South Dakota School of Mines &amp; Technology (joint program)</b>
<b>CURRENT PROGRAM TITLE:</b>	<b>Biomedical Engineering, Ph.D. (BMDE)</b>
<b>CIP CODE:</b>	<b>14.0501</b>
<b>UNIVERSITY DEPARTMENT:</b>	<b>Biomedical Engineering (UBME)</b>
<b>UNIVERSITY DIVISION:</b>	<b>Arts &amp; Sciences (UAS)</b>

**University Approval**

*To the Board of Regents and the Executive Director: I certify that I have read this proposal, that I believe it to be accurate, and that it has been evaluated and approved as provided by university policy.*

Elizabeth M. Freeburg

5/9/2017

Vice President of Academic Affairs or  
President of the University

Date

**1. This modification addresses a change in (place an "X" in the appropriate box):**

- Total credits required within the discipline     Total credits of supportive course work  
 Total credits of elective course work     Total credits required for program  
 Program name     Existing specialization  
 CIP Code     Other (explain below)

**2. Effective date of change:**

**3. Program Degree Level (place an "X" in the appropriate box):**

Associate     Bachelor's     Master's     Doctoral

**4. Category (place an "X" in the appropriate box):**

Certificate     Specialization     Minor     Major

**5. If a name change is proposed, the change will occur (place an "X" in the appropriate box):**

- On the effective date for all students  
 On the effective date for students new to the program (enrolled students will graduate from existing program)

**Proposed new name:** \_\_\_\_\_

*Reminder: Name changes impact require updating any related articulation agreements, site approvals, etc.*

**7. Primary Aspects of the Modification (add lines as needed):**

*Existing Curriculum*

*Proposed Curriculum (highlight changes)*

Biomedical Engineering, Ph.D. (BME)

N/A

Pref.	Num.	Title	Cr. Hrs.	Pref.	Num.	Title	Cr. Hrs.
<b>Departmental Requirements:</b>				<b>Departmental Requirements:</b>			
BME	508	Biomedical Engineering	3	Remove			
BME	601	Biomaterials	3	Remove			
BME	602	Anatomy and Physiology for Engineers	3	Remove			
BME	603	Molecular Biology for Engineers	3	Remove			
BME	710	Experimental Design & Data Analysis in BME	3	BME	710	Experimental Design & Data Analysis in BME	3
BME	790	Graduate Seminar	6	BME	790	Graduate Seminar	6
BME	888	Doctoral Research Prob/Projects in BME (PhD)	30	BME	888	Doctoral Research Prob/Projects in BME (PhD)	30
BME	&/or 898	&/or Ph.D. Dissertation		BME	&/or 898	&/or Ph.D. Dissertation	
<b>Core courses Subtotal:</b>			<b>51</b>	<b>Core courses Subtotal:</b>			<b>39</b>
BME XXX Electives Minimum required BME departmental course electives (BME 888 does not meet this requirement)			12	BME XXX Electives Minimum required BME departmental course electives (BME 888 does not meet this requirement)			12
With the approval of the department chair, the remaining electives may include departmental, transfer, or non-departmental coursework. Non-departmental electives are limited to a maximum of 9 credits.			21	With the approval of the department chair, the remaining electives may include departmental, transfer, or non-departmental coursework. Non-departmental electives are limited to a maximum of 15 credits.			33
<b>Subtotal of Electives:</b>			<b>33</b>	<b>Subtotal of Electives:</b>			<b>45</b>
Total number of hours required for major			84	Total number of hours required for major			84
Total number of hours required for degree			84	Total number of hours required for degree			84

**8. Explanation of the Change:**

Students with diverse science and engineering backgrounds are admitted to the graduate program, and as such, may have completed comparable advanced coursework in Biomedical Engineering, Biomaterials, Anatomy and Physiology for Engineers, or Molecular Biology for Engineers. Currently, students regularly receive waivers of these requirements, based on their academic backgrounds. This Substantial Program Modification reduces the number of required courses and gives the student and their advisor flexibility to tailor their class choices to enable the student to best attain their career goals. Additionally, we will increase the number of credits of non-departmental electives that students will be allowed to include in their program of study. This will afford the students opportunities to expand their interdisciplinary scientific background as well as include course from other fields such as business. The revised core of required courses closely matches those in Biology and Basic Biomedical Sciences.

**From:** Kouris, Demitris A.  
**Sent:** Thursday, April 20, 2017 9:00 AM  
**To:** Freeburg, Beth M <[Beth.Freeburg@usd.edu](mailto:Beth.Freeburg@usd.edu)>  
**Cc:** Engebretson, Daniel S <[Daniel.Engebretson@usd.edu](mailto:Daniel.Engebretson@usd.edu)>; Sinden, Richard R. <[Richard.Sinden@sdsmt.edu](mailto:Richard.Sinden@sdsmt.edu)>; Lineweber, Michelle L. <[Michelle.Lineweber@sdsmt.edu](mailto:Michelle.Lineweber@sdsmt.edu)>  
**Subject:** Re: Changes to BME graduate programs

Dr. Freeburg,

Based on Dr. Sinden's input, here are our thoughts:

1. We did not see interest in item 1. It could be unique.
2. These changes do not work entirely for us. We need to make VERY similar, but slightly different changes to accommodate the accelerated BME degree.
3. Yes these forms accommodate our interests, but we need to modify them for SDSMT.

I will ask Dr. Sinden to work on these modifications.

Thank you.

*Demitris A. Kouris, Ph.D*  
*Provost & VPAA - SD Mines*

On Apr 19, 2017, at 9:59 AM, Freeburg, Beth M <[Beth.Freeburg@usd.edu](mailto:Beth.Freeburg@usd.edu)> wrote:

Provost Kouris,

Thank you for your feedback. May I clarify further? Attached are the 2 substantive program modifications and new specialization request that will be considered by our Graduate Council curriculum committee. Would you clarify the following questions:

1. Would you like to jointly participate in the non-thesis M.S. specialization in Medical Product Development and Manufacturing?  
If no, USD would make this specialization unique.
2. Would you like to include SDSMT on the two substantive program proposals so the changes may be made for both of us?
3. Do these forms accommodate your interests?

Please give me a call if you would like to discuss.

Thank you for your help,  
Beth  
605-677-5317