



**SOUTH DAKOTA BOARD OF REGENTS  
ACADEMIC AFFAIRS FORMS**

**Institutional Substantive Program Modification Requests**

**Institution:** South Dakota School of Mines & Technology **Date:** 4/26/2017

Institutional representatives should provide direct links to PDF documents for each of the program modification requests represented below. All requests should be posted on the campus Curriculum and Instruction website one week prior to the Academic Affairs Council meeting where the program modification request is being considered.

<b>Program Title</b>	<b>Approval</b>
<a href="#">B.S. in Geology</a>	PT
<a href="#">B.S. in Metallurgical Engineering</a>	PT
<a href="#">M.S. in Engineering Management</a> – Formal BOR approval needed – see June 2017 BOR agenda	----
<a href="#">M.S. in Materials Engineering and Science</a>	PT
<a href="#">Ph.D. in Geology &amp; Geological Engineering</a>	----

Program modifications referenced above for approval have been reviewed by the Academic Affairs Council and the System Vice President for Academic Affairs and may be advanced forward for entry in Colleague. For those program modifications listed above that did not receive approval, additional clarification or justification will be necessary and should be re-routed through the review process on a separate “Institutional Substantive Program Modification Requests” form once all issues have been resolved.

*Paul Turner*

**Signature: System Vice President for Academic Affairs**

6/27/2017

**Date**



**SOUTH DAKOTA BOARD OF REGENTS  
ACADEMIC AFFAIRS FORMS**

**Substantive Program Modification Program**

Use this form to request minor changes in existing programs (majors, minors, certificates, or specializations).

<b>UNIVERSITY:</b>	SDSM&T
<b>CURRENT PROGRAM TITLE:</b>	<b>B.S. in Geology</b>
<b>CIP CODE:</b>	<b>40.0601</b>
<b>UNIVERSITY DEPARTMENT:</b>	<b>Geology and Geological Engineering</b>
<b>UNIVERSITY DIVISION:</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.*

Dr. Demitris Kouris

\_\_\_\_\_  
Vice President of Academic Affairs or  
President of the University

1/30/2017

\_\_\_\_\_  
Date

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

- |   |   |
|---|---|
| <input type="checkbox"/> Total credits required within the discipline     | <input checked="" type="checkbox"/> Total credits of supportive course work |
| <input checked="" type="checkbox"/> Total credits of elective course work | <input type="checkbox"/> Total credits required for program                 |
| <input type="checkbox"/> Program name                                     | <input type="checkbox"/> Existing specialization                            |
| <input type="checkbox"/> CIP Code   | <input type="checkbox"/> Other (explain below)                              |

**2. Effective date of change: 8/1/2017**

**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 may require updating related articulation agreements, site approvals, etc.*

**6. Primary Aspects of the Modification (add lines or adjust cell size as needed):**

Existing Curriculum				Proposed Curriculum (highlight changes)			
Prof.	Num.	Title	Cr. Hrs.	Prof.	Num.	Title	Cr. Hrs.
MATH	123	Calculus I	4	MATH	123	Calculus I	4
MATH	125	Calculus II	4	MATH	125	Calculus II	4
MATH	225 or 381	Calculus III or Intro to Statistics	4 or 3	MATH	225 or 381	Calculus III or Intro to Statistics	4 or 3
CHEM	112	General Chemistry I	3	CHEM	112	General Chemistry I	3
CHEM	112L	Exp. Gen. Chem. I	1	CHEM	112L	Exp. Gen. Chem. I	1
CHEM	114	General Chemistry II	3	CHEM	114	General Chemistry II	3
CHEM	114L	Exp. Gen. Chem. II	1	CHEM	114L	Exp. Gen. Chem. II	1
PHYS	211	Univ. Physics I	3	PHYS	211	Univ. Physics I	3
PHYS	213	Univ. Physics II	3	PHYS	213	Univ. Physics II	3
ENGL	101	Composition I	3	ENGL	101	Composition I	3
ENGL	279	Technical Comm. I	3	ENGL	279	Technical Comm. I	3
ENGL	289	Technical Comm. II	3	ENGL	289	Technical Comm. II	3
GEOE	324 or 482	Eng. Geophysics or Applied Geomorphology	3 or 3	GEOE	324 or 482	Eng. Geophysics or Applied Geomorphology	3 or 3
GEOL	110	Explorations in Geology	2	GEOL	110	Explorations in Geology	2
GEOL	201	Physical Geology	3	GEOL	201	Physical Geology	3
GEOL	201L	Physical Geology Lab	1	GEOL	201L	Physical Geology Lab	1
GEOL	212**	Mineral. And Crystallog.	3	GEOL	212**	Mineral. And Crystallog.	3
GEOL	322**	Structural Geology	3	GEOL	322**	Structural Geology	3
GEOL	323**	Search for Our Past	3	GEOL	323**	Search for Our Past	3
GEOL	331**	Strat. And Sedimentation	3	GEOL	331**	Strat. And Sedimentation	3
GEOL	341**	Intro to Ign/Met Petrology	3	GEOL	341**	Intro to Ign/Met Petrology	3
GEOL	410**	Field Geology	6	GEOL	410**	Field Geology	6
GEOL	416**	Intro to GIS	3	GEOL	416**	Intro to GIS	3
GEOL	461**	Invert. Paleontology	3	GEOL	461**	Invert. Paleontology	3
GEOL	464**	Senior Research I	1	GEOL	464**	Senior Research I	1
GEOL	465**	Senior Research II#	3	GEOL	465**	Senior Research II#	3
		GE Hum Electives	6			GE Hum Electives	6
		GE SS Electives	6			GE SS Electives	6
		Hum/SS Elective	3			Hum/SS Elective	3
		Elective GEOL or GEOE	18*			Elective GEOL or GEOE	18*
		Free Electives	12-13			Free Electives	9-11
				CSC	111 or 150 or 170	Intro to Computer Program, Computer Science I or Programming for Eng. or Sci.	2 or 3 or 3

Total number of hours required for major, minor, or specialization 

120
-----

  
Total number of hours required for degree 

120
-----

Total number of hours required for major, minor, or specialization 

120
-----

  
Total number of hours required for degree 

120
-----

# Under exceptional circumstances, a student may petition the department head to substitute geology electives for GEOL 465. \*At least 9 credit hours must be at the 400 level. \*\* A grade of C or better is required for graduation.

**7. Explanation of the Change:**

Students pursuing careers or graduate degrees in the geosciences find an increasing need for basic computer programming skills. We propose adding a required CSC course to the Geology BS program. To accommodate this addition, we reduced the number of free electives from 12-13 to 9-11.

**SOUTH DAKOTA SCHOOL OF MINES & TECHNOLOGY**  
**Affected Departments Form**  
Geology BS Program Modification

**1. Affected Departments**

Which, if any, departments outside of the requesting department will be affected by the change requested? Does the requested change affect the delivery of another course or the requirements of another degree program? Please specify.

We propose adding a CSC course to the required curriculum, which will affect the course offerings of the Mathematics and Computer Science Department.

**2. Number of Students Affected**

Provide an estimate of the number of students per year that will be affected by the requested change? How was this estimate generated?

20-25: estimated number of students that are in each incoming Geology BS class.

**3. Notification**

The affected department head/program coordinator should be notified of the changes. Please attach all relevant emails from this communication to this form.

**From:** Belanger, Christina L.  
**Sent:** Monday, January 30, 2017 2:14 PM  
**To:** Riley, Kyle L. <Kyle.Riley@sdsmt.edu>  
**Subject:** RE: Geology BS proposal to require CSC 150 OR CSC 170

Kyle –

Thank you for all that detailed information. I think we will list all three courses as you suggested to give students flexibility. We'll advise students individually about which might be best for their goals.

Thanks again,  
Christina

**From:** Riley, Kyle L.  
**Sent:** Friday, January 20, 2017 4:53 PM  
**To:** Belanger, Christina L. <[Christina.Belanger@sdsmt.edu](mailto:Christina.Belanger@sdsmt.edu)>  
**Subject:** RE: Geology BS proposal to require CSC 150 OR CSC 170

Hello,

I think all majors could use a little computing and so our department is happy to hear that GEOL is interested in adding some computing to the curriculum. I think there are really three different courses to consider

CSC 111/111L is a 2 credit class that covers Python. I am sure this would be of interest for students facing serious GIS programming in the future. This course has currently run in the fall, but it would be nice to get it running for the spring. The MET program has been interested in this course and we use this as a warm up course for the CSC and CENG majors that are not Calculus ready. This course has a prerequisite of College Algebra (Math 102).

CSC 170/170L was originally created for the ME majors, but it is a good course for students new to programming and is more hands on than any of the other classes we offer (anyone is welcome to take the class). The class covers the use of C and also uses a PC Duino (which is the platform for all the hands on work). This class has a pre or co requisite of Calculus 1 (Math 123).

CSC 150/150L this is our serious programming course and covers C++ using visual studio. This is the course for students interested in pursuing the CSC minor or the robotics minor.

I would suspect that most of your GEOL students would be interested in CSC 111/111L given the two credits and the python, but I would suggest you have your program list all three courses as options to provide the flexibility to your students for scheduling. We offer far more sections of CSC 170/170L and CSC 111/111L would not be offered as much. If your program is planning to incorporate some formal computer programming in your classes of C or C++ then CSC 111/111L would not do a good job preparing your students for this kind of work and your plan of CSC 150 or CSC 170 would be a better fit. Please let me know if you want to stop by and discuss this further. We also appreciate learning if you end up adopting one of the courses since that

would alter the funding that is need to support the course to meet the increase student demand.  
Thank you.

Kyle

From: Belanger, Christina L.  
Sent: Friday, January 20, 2017 4:23 PM  
To: Riley, Kyle L.  
Subject: Geology BS proposal to require CSC 150 OR CSC 170

Dr. Riley –

The Geology BS program would like to propose requiring a computer science course and give students the option of taking either CSC 150 or CSC 170. In our program flow chart, we suspect students will take one of these courses in their third semester, although students may take the course at a different time depending on their schedules and incoming math level. Our Geology BS cohorts are typically ~20-25 students in each year.

We have internally approved this requirement in the GGE department, but realize that this adds students to your department's courses. Please let us know if you would be able to accommodate these additional students or if you have concerns about this new requirement in the Geology BS program.

Thank you,  
Christina

-----  
Christina L. Belanger, Ph.D.  
Assistant Professor  
Geology and Geological Engineering  
South Dakota School of Mines & Technology  
501 East Saint Joseph Street  
Rapid City, SD 57701



**SOUTH DAKOTA BOARD OF REGENTS  
ACADEMIC AFFAIRS FORMS**

**Substantive Program Modification Form**

Use this form to request minor changes in existing programs (majors, minors, certificates, or specializations).

<b>UNIVERSITY:</b>	SDSM&T
<b>CURRENT PROGRAM TITLE:</b>	<b>B.S. in Metallurgical Engineering</b>
<b>CIP CODE:</b>	<b>14.2001</b>
<b>UNIVERSITY DEPARTMENT:</b>	<b>Materials and Metallurgical Engineering</b>
<b>UNIVERSITY DIVISION:</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.*

Dr. Demitris Kouris

\_\_\_\_\_  
Vice President of Academic Affairs or  
President of the University

4/5/2017

\_\_\_\_\_  
Date

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

- |   |  |
|---|--|
| <input type="checkbox"/> Total credits required within the discipline     | <input type="checkbox"/> Total credits of supportive course work |
| <input checked="" type="checkbox"/> Total credits of elective course work | <input type="checkbox"/> Total credits required for program      |
| <input type="checkbox"/> Program name                                     | <input type="checkbox"/> Existing specialization                 |
| <input type="checkbox"/> CIP Code   | <input checked="" type="checkbox"/> Other (explain below)        |

*Revised courses in the program including course addition and deletion*

**2. Effective date of change: 8/1/2017**

**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 may require updating related articulation agreements, site approvals, etc.*

**6. Primary Aspects of the Modification (add lines or adjust cell size as needed):**

<i>Existing Curriculum</i>				<i>Proposed Curriculum (highlight changes)</i>			
Pref.	Num.	Title	Cr. Hrs.	Pref.	Num.	Title	Cr. Hrs.
MATH	123	Calculus I	4	MATH	123	Calculus I	4
MATH	125	Calculus II	4	MATH	125	Calculus II	4
MATH	225	Calculus III	4	MATH	225	Calculus III	4
MATH	321	Differential Equations	3	MATH	321	Differential Equations	3
CHEM	112/L	General Chemistry I/Laboratory	4	CHEM	112/L	General Chemistry I/Laboratory	4
CHEM	114/L	General Chemistry II/Laboratory	4	CHEM	114/L	General Chemistry II/Laboratory	4
ENGL	101	Composition I	3	ENGL	101	Composition I	3
ENGL	279	Tech. Comm. I	3	ENGL	279	Tech. Commu. I	3
ENGL	289	Tech. Comm. II	3	ENGL	289	Tech. Comm. II	3
PHYS	211	University Physics I	3	PHYS	211	University Physics I	3
PHYS	211	University Physics II	3	PHYS	211	University Physics II	3
EM	214	Statics	3	EM	214	Statics	3
EM	321	Mechanics of Materials	3	EM	321	Mechanics of Materials	3
MATH	373	Intro to Numerical Analysis	3	MATH	373	Intro to Numerical Analysis	3
IE	301	Basic Engineering Econ	2	IE	301	Basic Engineering Econ	2
EE	301/L	Introduction to Circuits, Machines & Systems / Laboratory	4	EE	301/L	Introduction to Circuits, Machines & Systems / Laboratory	4
HUM/SS	100-200	Humanities and Social Science Electives	12	HUM/SS	100-200	Humanities and Social Science Electives	12
HUM/SS	300-400	Upper Division Humanities and Social Science Electives	3	HUM/SS	300-400	Upper Division Humanities and Social Science Electives	3
		Natural Science & Math Electives	6			Natural Science & Math Electives	6
MET	220/L	Mineral Processing/Laboratory	4	MET	220/L	Mineral Processing/Laboratory	4
MET	231L	Properties of Materials Laboratory	1	MET	231L	Properties of Materials Laboratory	1
MET	232	Properties of Materials	3	MET	232	Properties of Materials	3
MET	310/L	Aqueous Extraction / Laboratory	4	MET	310/L	Aqueous Extraction / Laboratory	4
MET	320	Metallurgical	4	MET	320	Metallurgical	4

		Thermodynamics				Thermodynamics	
MET	321/L	High Temperature Extraction / Laboratory	4	MET	321/L	High Temperature Extraction / Laboratory	4
MET	330/L	Physics of Metals / Laboratory	4	MET	330/L	Physics of Metals / Laboratory	4
MET	332	Thermomechanical Processing	3	MET	332	Thermomechanical Processing	3
MET	422	Transport Phenomena	4	MET	422	Transport Phenomena	4
MET	433	Process Control	3	MET	433	Process Control	3
MET	440/L	Mechanical Metallurgy / Laboratory	4	MET	440/L	Mechanical Metallurgy / Laboratory	4
MET		Directed MET Electives	6	MET		Directed MET Electives	6
MET	351	Engineering Design I	(2-0)				
MET	352	Engineering Design II	(1-0)	MET	352	Principles of Metallurgical Design	(1-1)
MET	464	Engineering Design III	(0-2)	MET	464	Senior Design I	(0-2)
MET	465	Engineering Design IV	(0-1)	MET	465	Senior Design II	(0-1)
PE	100	Activity Courses	(1-0)	CSC	170/L	Programming for Engineers and Scientists	(3-0)
		Free Electives	5			Free Electives	4
Total number of hours required for major, minor, or specialization			130	Total number of hours required for major, minor, or specialization			130
Total number of hours required for degree			130	Total number of hours required for degree			130

## 7. Explanation of the Change:

Metallurgical Engineering has decided to change the manner in which we present design to our students. This primarily involves altering the design sequence, changing the content of MET 352 to focus on principles, and incorporating the practical design project solely into senior design. In addition, we are requiring a programming course and eliminating our PE requirement. These changes have resulted in a change in the number of free electives

**SOUTH DAKOTA SCHOOL OF MINES & TECHNOLOGY**  
**Affected Departments Form**

**1. Affected Departments**

Which departments will the requested change affect? Does the requested change affect the delivery of another course or the requirements of another degree program? Please specify.

These curriculum changes affect PE and CSC

**2. Number of Students Affected**

Approximately how many students will be affected annually by the requested change? How was this number determined?

20-30 students are in a standard MET department cohort.

**3. Notification**

Please notify all affected department heads and program coordinators, and attach all relevant correspondence and related documents.

The affected departments were notified and their responses are attached.

From: Riley, Kyle L.  
Sent: Monday, March 20, 2017 12:51 PM  
To: West, Michael K.  
Subject: RE: MET - proposing CSC 170 be required

Hi Mike,

I know it would also feed into Math 373, but that should not be a tight requirement for your program either. Thank you.

Kyle

From: West, Michael K.  
Sent: Monday, March 20, 2017 12:50 PM  
To: Riley, Kyle L.  
Subject: RE: MET - proposing CSC 170 be required

It is on the books Freshman year – but It won't be a very tight requirement as it only directly feeds MATH 381.

From: Riley, Kyle L.  
Sent: Monday, March 20, 2017 11:31 AM  
To: West, Michael K.  
Subject: RE: MET - proposing CSC 170 be required

Hi Mike,

I was working to accommodate the CSC 111/111L or CSC 170/170L option. Will this be a tight requirement for your freshmen year? ME majors typically head to mechatronics after finishing CSC 170 and mechatronics feeds into some other courses. Thus, the MEs typically take the CSC 170 class in spring semester of freshmen year. If your program does not have a force for CSC 170 then it could be your students would take it later. We have found students usually put off requirements until the curriculum forces enrollment. We typically have a bit more room in CSC 170 in the fall versus the spring.

Kyle

From: West, Michael K.  
Sent: Monday, March 20, 2017 11:20 AM  
To: Riley, Kyle L.  
Subject: MET - proposing CSC 170 be required

Hello Kyle,  
We will soon propose a program mod to make CSC 170 required.  
This would be on our flowchart in the Spring semester (freshman year).  
I wanted to let you know (as an affected dept).  
Please let me know if you see any major problems with this.  
-Mike

From: Lueken, Joel N.  
Sent: Monday, March 20, 2017 11:26 AM  
To: West, Michael K.  
Subject: RE: MET - proposing to eliminate PE credit (1) requirement

Thanks for the email Michael! Just out of curiosity why? I would love some education on this.

Joel

WEBSITE    TWITTER    DONATE



**HARDROCKER**  
ATHLETICS

[WWW.GOROCKERS.COM](http://WWW.GOROCKERS.COM)

**Joel Lueken**  
Hardrockers Athletic Director



O: 605.394.2352  
C: 816.805.0172  
F: 605.394.3375  
Email: [Joel.Lueken@sdsmt.edu](mailto:Joel.Lueken@sdsmt.edu)

**From:** West, Michael K.  
**Sent:** Monday, March 20, 2017 11:22 AM  
**To:** Lueken, Joel N. <[Joel.Lueken@sdsmt.edu](mailto:Joel.Lueken@sdsmt.edu)>  
**Subject:** MET - proposing to eliminate PE credit (1) requirement

Hello Joel,

We will soon be making a program mod to eliminate 1 cr PE requirement.

Just wanted to let you know as an "affected program".

I imagine a lot of people will still take it as with the recent mod we are left with 1 cr of free elective.

Please let me know if you have any questions.

-Mike

Michael K. West, PhD  
Department Head and Associate Professor  
Department of Materials and Metallurgical Engineering  
South Dakota School of Mines and Technology  
501 East Saint Joseph Street  
Rapid City, SD 57701  
[michael.west@sdsmt.edu](mailto:michael.west@sdsmt.edu)  
(605) 394-1283  
(605) 394-3369 fax



**SOUTH DAKOTA BOARD OF REGENTS  
ACADEMIC AFFAIRS FORMS**

**Substantive Program Modification Form**

Use this form to request substantive changes in existing programs (majors, minors, certificates, or specializations).

<b>UNIVERSITY:</b>	SDSM&T
<b>CURRENT PROGRAM TITLE:</b>	<b>M.S. in Engineering Management</b>
<b>CIP CODE:</b>	<b>15.1501</b>
<b>UNIVERSITY DEPARTMENT:</b>	<b>Department of Industrial Engineering</b>
<b>UNIVERSITY DIVISION:</b>	<b>NA</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.*

Dr. Demitris Kouris \_\_\_\_\_

Vice President of Academic Affairs or  
President of the University

3/10/2017 \_\_\_\_\_

Date

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

- |   |  |
|---|--|
| <input type="checkbox"/> Total credits required within the discipline | <input type="checkbox"/> Total credits of supportive course work |
| <input type="checkbox"/> Total credits of elective course work        | <input type="checkbox"/> Total credits required for program      |
| <input type="checkbox"/> Program name                                 | <input type="checkbox"/> Existing specialization                 |
| <input type="checkbox"/> CIP Code                                     | <input checked="" type="checkbox"/> Other (explain below)        |

**2. Effective date of change: 5/31/2017**

**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 may require updating related articulation agreements, site approvals, etc.*

**6. Primary Aspects of the Modification (add lines or adjust cell size as needed):**

*Existing Curriculum*

*Proposed Curriculum (highlight changes)*

Current Program Name:		Proposed Program Name:	
No accelerated program currently exists for Engineering Management		Program requirements for Accelerated MS  The accelerated BS/MS program is designed to permit qualified students to shorten the expected time to an MS degree by counting approved courses towards both the BS and MS degrees. Students entering the accelerated MS program must satisfy all requirements expected of traditional MS students. The accelerated BS/MS program is governed by campus-wide policies as stated in the Graduate section of the catalog. The following additional guidelines and policies pertain to the accelerated programs within the Department of Industrial Engineering.	
		<ol style="list-style-type: none"> <li>1. Up to twelve credits of approved courses may be double-counted. To be double-counted, the courses taken at the graduate level, which includes 400/500-level courses taken at the 500-level, or 600-level courses. 400 level courses in other departments may be petitioned to the ENGM graduate program director to be included.</li> <li>2. All required and elective courses must be approved in advance of registration by the ENGM graduate program coordinator.</li> </ol>	
Total number of hours required for major, minor, or specialization		Total number of hours required for major, minor, or specialization	
Total number of hours required for degree (thesis)	30	Total number of hours required for degree (thesis)	30

Total number of hours required for degree (non- thesis)

Total number of hours required for degree (non-thesis)

**7. Explanation of the Change:**

The Department of Industrial Engineering is proposing that the MS ENGM be available as an accelerated BS/MS program.



**SOUTH DAKOTA SCHOOL OF MINES & TECHNOLOGY**  
**Affected Departments Form**

**1. Affected Departments**

Which departments will the requested change affect? Does the requested change affect the delivery of another course or the requirements of another degree program? Please specify.

This change will not affect any other departments, only IE.

**2. Number of Students Affected**

Approximately how many students will be affected annually by the requested change? How was this number determined?

Approximately 15 students a year will take alternative graduate classes. Some will be on campus. Some will take them during co-ops as a convenience.

**3. Notification**

Please notify all affected department heads and program coordinators, and attach all relevant correspondence and related documents.

Not Applicable.



**SOUTH DAKOTA BOARD OF REGENTS  
ACADEMIC AFFAIRS FORMS**

**Substantive Program Modification Form**

Use this form to request minor changes in existing programs (majors, minors, certificates, or specializations).

<b>UNIVERSITY:</b>	SDSM&T
<b>CURRENT PROGRAM TITLE:</b>	<b>M.S. in Materials Engineering and Science</b>
<b>CIP CODE:</b>	<b>14.1801</b>
<b>UNIVERSITY DEPARTMENT:</b>	<b>Materials and Metallurgical Engineering</b>
<b>UNIVERSITY DIVISION:</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.*

Dr. Demitris Kouris  
 \_\_\_\_\_  
 Vice President of Academic Affairs or  
 President of the University

3/17/2017  
 \_\_\_\_\_  
 Date

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

- |   |  |
|---|--|
| <input type="checkbox"/> Total credits required within the discipline     | <input type="checkbox"/> Total credits of supportive course work |
| <input checked="" type="checkbox"/> Total credits of elective course work | <input type="checkbox"/> Total credits required for program      |
| <input type="checkbox"/> Program name                                     | <input type="checkbox"/> Existing specialization                 |
| <input type="checkbox"/> CIP Code   | <input checked="" type="checkbox"/> Other (explain below)        |

New core course added and existing core course credits reduced, which in turn modifies the number of elective credits.

**2. Effective date of change: fall 2017**

**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 may require updating related articulation agreements, site approvals, etc.*

**6. Primary Aspects of the Modification (add lines or adjust cell size as needed):**

<i>Existing Curriculum</i>				<i>Proposed Curriculum (highlight changes)</i>			
Pref.	Num.	Title	Cr. Hrs.	Pref.	Num.	Title	Cr. Hrs.
MES	601	Fundamentals of Materials Engineering	4	MES	601	Fundamentals of Materials Engineering	3
MES	603	Condensed Matter Physics	4	Phys	539	Solid State Physics	4
MES	604	Chemistry of Materials	4	MES	604	Chemistry of Materials	4
MES	790	Seminar	1	MES	790	Seminar	1
				MES	602/602L	Materials Characterization: Methods and Applications/Lab	3
		Elective Courses (non-thesis option)	19			Elective Courses (non-thesis option)	15
		Elective Courses (thesis option)	11			Elective Courses (thesis option)	9
MES	798	Thesis (thesis option)	6	MES	798	Thesis (thesis option)	6
				MES	788	Master's Research Problems/Projects	2
<p>Two options are available in this degree program: one option involves a thesis component and the other option involves coursework only. In the thesis option, 24 hours of coursework and a minimum 6 credit hours of thesis research are required. With the second option, 32 hours of coursework must be taken. In the latter option however, the students are required to undertake a project under the supervision of a faculty member. Because students graduating with this degree are expected to have a broad-based fundamental knowledge in both materials engineering and materials science, every student is required to take three core courses (12 cr) and a seminar course (1 cr).</p>				<p>Two options are available in this degree program: one option involves a thesis component and the other option involves coursework only. In the thesis option, 24 hours of coursework and a minimum 6 credit hours of thesis research are required. With the second option, 30 hours of coursework must be taken and 2 hours of research problems/projects. In the latter option however, the students are required to undertake a project under the supervision of a faculty member. Because students graduating with this degree are expected to have a broad-based fundamental knowledge in both materials engineering and materials science, every student is required to take <b>four</b> core courses (<b>15 cr</b>) and a seminar course (1 cr).</p>			
Total number of hours required for major, minor, or specialization				Total number of hours required for major, minor, or specialization			
Total number of hours			32 (non-	Total number of hours			32 (non-

required for degree

thesis) 30 (thesis)
------------------------

required for degree

thesis) 30 (thesis)
------------------------

**7. Explanation of the Change:**

MES 603 (4 cr) will be replaced by Phys 539 (4 cr) as a required core course. The exiting core course, MES 601, will be reduced from 4 cr to 3 cr. MES 602 (3 cr) will be added to the program as a required core course. MES 788 (2 cr) is now required for the non-thesis option to account for the non-thesis project. The overall changes to the curriculum are described above.

# SOUTH DAKOTA SCHOOL OF MINES & TECHNOLOGY

## Affected Departments Form

### **1. Affected Departments**

Which departments will the requested change affect? Does the requested change affect the delivery of another course or the requirements of another degree program? Please specify.

Physics Department will be affected by the enrollment of MES students in Phys 539. The course historically has relatively low enrollment, so the impact should be minimal. Furthermore, the MES 603 course was previously taught by faculty from the Physics Department. In essence, the change is a zero sum difference.

### **2. Number of Students Affected**

Approximately how many students will be affected annually by the requested change? How was this number determined?

5 students affected annually, based upon prior enrollments in MES 603.

### **3. Notification**

Please notify all affected department heads and program coordinators, and attach all relevant correspondence and related documents.

Met face-to-face with Physics Dept. Head on February 15<sup>th</sup>, and the changes are made in conjunction with that Department.



**SOUTH DAKOTA BOARD OF REGENTS  
ACADEMIC AFFAIRS FORMS**

**Substantive Program Modification Program**

Use this form to request minor changes in existing programs (majors, minors, certificates, or specializations).

<b>UNIVERSITY:</b>	SDSM&T
<b>CURRENT PROGRAM TITLE:</b>	<b>Geology and Geological Engineering, Ph.D.</b>
<b>CIP CODE:</b>	<b>14.3901</b>
<b>UNIVERSITY DEPARTMENT:</b>	<b>Geology and Geological Engineering</b>
<b>UNIVERSITY DIVISION:</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.*

Dr. Demitris Kouris

\_\_\_\_\_  
Vice President of Academic Affairs or  
President of the University

3/30/2017

\_\_\_\_\_  
Date

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

- |   |  |
|---|--|
| <input type="checkbox"/> Total credits required within the discipline | <input type="checkbox"/> Total credits of supportive course work |
| <input type="checkbox"/> Total credits of elective course work        | <input type="checkbox"/> Total credits required for program      |
| <input checked="" type="checkbox"/> Program name                      | <input type="checkbox"/> Existing specialization                 |
| <input type="checkbox"/> CIP Code                                     | <input type="checkbox"/> Other (explain below)                   |

**2. Effective date of change: 7/1/2017**

**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: Geology, Geological Engineering, and Mining Engineering, Ph.D.**

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

**6. Primary Aspects of the Modification (add lines or adjust cell size as needed):**

<i>Existing Curriculum</i>				<i>Proposed Curriculum (highlight changes)</i>			
Pref.	Num.	Title	Cr. Hrs.	Pref.	Num.	Title	Cr. Hrs.
Total number of hours required for major, minor, or specialization				Total number of hours required for major, minor, or specialization			
Total number of hours required for degree				Total number of hours required for degree			

**7. Explanation of the Change:**

The Department of Mining Engineering and Management (MEM) desires to add a Ph.D. program. In lieu of creating a new independent Ph.D. program, the MEM Department has worked cooperatively with the Department of Geology and Geological Engineering to plan for the development of a new specialization in **Mining Engineering** under the existing Geology and Geological Engineering (GGE) Ph.D. program. This will require a change to the name of the program to reflect the new specialization.

**SOUTH DAKOTA SCHOOL OF MINES & TECHNOLOGY**  
**Affected Departments Form**

**1. Affected Departments**

Which departments will the requested change affect? Does the requested change affect the delivery of another course or the requirements of another degree program? Please specify.

Department of Mining Engineering and Management.

No.

**2. Number of Students Affected**

Approximately how many students will be affected annually by the requested change? How was this number determined?

The new Ph.D. specialization of Mining Engineering under the existing GGE Ph.D. program will affect 2-3 students. This is the anticipated number of students that will be enrolled in the Ph.D. specialization at any given time.

**3. Notification**

Please notify all affected department heads and program coordinators, and attach all relevant correspondence and related documents.

N/A.