

SOUTH DAKOTA BOARD OF REGENTS

Committee on Academic and Student Affairs

AGENDA ITEM: II – C (3)

DATE: April 1-2, 2015

SUBJECT: Program Modifications – SDSM&T

South Dakota School of Mines & Technology has submitted the following program modification proposal. These requests have been reviewed by the system Vice President for Academic Affairs and the Executive Director recommends approval.

Existing Program – Substantive Program Modifications

- Chemical Engineering (M.S.) – *request change to add accelerated option to the program*
- Computational Sciences and Robotics (M.S.) – *request change in CIP code attached to the program*
- Mechanical Engineering (M.S.) – *request change to add accelerated option to the program*

RECOMMENDED ACTION OF THE EXECUTIVE DIRECTOR

Approve SDSM&T’s program modification requests for its M.S. in Chemical Engineering; M.S. in Computational Sciences and Robotics; and M.S. in Mechanical Engineering programs.

South Dakota Board of Regents

EXISTING PROGRAM: SUBSTANTIVE PROGRAM MODIFICATION

This form is used to request substantive changes in already existing programs (majors, minors, specializations).

1. INSTITUTION: SDSM&T

2. CURRENT PROGRAM NAME: M.S. in Chemical Engineering (Accelerated Option)

3. THIS PROPOSAL DEALS WITH A CHANGE IN:

Distribution of Credits

_____ total credits required within the discipline	_____ Program name
_____ total credits of supportive course work	_____ Existing specialization
_____ total credits of elective course work	_____ Addition of specialization
_____ total credits required for program	<u> X </u> Other (explain).

4. LEVEL:

_____ Certificate
 _____ Associate Degree
 _____ Bachelor's Degree
 X Master's Degree
 _____ Doctoral Degree

5. CATEGORY:

_____ Minor
 X Major
 _____ Specialization

6. EFFECTIVE DATE OF CHANGE: Spring 2015

7. IF A NAME CHANGE IS PROPOSED, THIS WILL OCCUR:

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

8. PRIMARY ASPECTS OF THE MODIFICATION:

Existing Curriculum				Proposed Curriculum (Highlight Changes)			
Current Program Name:				Proposed Program Name:			
Pre	Num	Title	Cr Hrs	Pre	Num	Title	Cr Hrs
M.S. in Chemical Engineering (Accelerated Non-Thesis)				M.S. in Chemical Engineering (Accelerated Non-Thesis)			
CBE	550	Systems Analysis Applied to Chemical Engineering	3	CBE	550	Systems Analysis Applied to Chemical Engineering	3
CBE	612	Transport Phenomena: Momentum	3	CBE	612	Transport Phenomena: Momentum	3
CBE	613	Transport Phenomena: Heat	3	CBE	613	Transport Phenomena: Heat	3
CBE	621	Advanced Chemical Engineering Thermodynamics I	3	CBE	621	Advanced Chemical Engineering Thermodynamics I	3
		Kinetics Elective Credits	3			Kinetics Elective Credits	3
		Applied Computation Elective Credits	3			Applied Computation Elective Credits	3
CBE	790	Seminar	1	CBE	790	Seminar	1
CBE	788	Master's Research Problems/Project (minimum)	2	CBE	788	Master's Research Problems/Project (minimum)	2
		Chemical Engineering Approved Electives	8			Chemical Engineering Approved Electives	8
		Engineering Management	3			Engineering Management	3
						Dual Counted BS/MS Credits	9
		Total:	32			Total:	32
M.S. in Chemical Engineering (Accelerated Thesis)				M.S. in Chemical Engineering (Accelerated Thesis)			
CBE	550	Systems Analysis Applied to Chemical Engineering	3	CBE	550	Systems Analysis Applied to Chemical Engineering	3
CBE	612	Transport Phenomena: Momentum	3	CBE	612	Transport Phenomena: Momentum	3
CBE	613	Transport Phenomena: Heat	3	CBE	613	Transport Phenomena: Heat	3
CBE	621	Advanced Chemical Engineering Thermodynamics I	3	CBE	621	Advanced Chemical Engineering Thermodynamics I	3
		Kinetics Elective Credits	3			Kinetics Elective Credits	3
		Applied Computation Elective Credits	3			Applied Computation Elective Credits	3
CBE	790	Seminar	1	CBE	790	Seminar	1
CBE	798	Thesis (minimum)	6	CBE	798	Thesis (minimum)	6
		Chemical Engineering Approved Electives	5			Chemical Engineering Approved Electives	5
						Dual Counted BS/MS Credits	9

		Total:	30			Total:	30
--	--	--------	----	--	--	--------	----

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

30 or 32

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

30 or 32

Total number of hours required for degree

30 or 32

**Total number of hours required for
degree**

30 or 32

9. EXPLANATION OF THE CHANGE:

Participation in the SDSM&T accelerated master's initiative for both thesis and non-thesis options of the Chemical Engineering MS program. (This request was originally presented to and approved by the University Curriculum Committee on February 13, 2013. The more detailed form is presented here, per recent AAC and BOR request.)

Dr. Richard Sinden

Institutional Authorization (President or Designee)

02/13/2013 (original); 02/24/2015
(second submission)

Date Submitted

South Dakota Board of Regents

EXISTING PROGRAM: SUBSTANTIVE PROGRAM MODIFICATION

This form is used to request substantive changes in already existing programs (majors, minors, specializations).

1. INSTITUTION: **South Dakota School of Mines & Technology**

2. CURRENT PROGRAM NAME: **M.S. in Computational Sciences and Robotics**

3. THIS PROPOSAL DEALS WITH A CHANGE IN:

Distribution of Credits

<p>_____ total credits required within the discipline</p> <p>_____ total credits of supportive course work</p> <p>_____ total credits of elective course work</p> <p>_____ total credits required for program</p>	<p>_____ Program name</p> <p>_____ Existing specialization</p> <p>_____ Addition of specialization</p> <p>_____ Other (explain) change in <input checked="" type="checkbox"/> CIP code</p>
---	---

4. LEVEL:

_____ Certificate

_____ Associate Degree

_____ Bachelor's Degree

Master's Degree

_____ Doctoral Degree

5. CATEGORY:

_____ Minor

_____ Major

_____ Specialization

6. EFFECTIVE DATE OF CHANGE: Summer 2015

7. IF A NAME CHANGE IS PROPOSED, THIS WILL OCCUR:

_____ on the effective date for all students

_____ on the effective date for students new to the program
(enrolled students will graduate from existing program)

8. PRIMARY ASPECTS OF THE MODIFICATION:

Current CIP code: 11.0102 (Artificial Intelligence)

New CIP code: 30.3001 (Computational Sciences)

9. EXPLANATION OF THE CHANGE:

Currently the CIP code attached to the program is the code created for the M.S. Robotics and Intelligent Autonomous Systems. A couple of years ago we revised the program and changed the name of the program to Computational Sciences and Robotics. The new CIP code is a better match to the revised program.

Dr. Richard Sinden

Institutional Authorization (President or Designee)

09/09/2014

Date Submitted

South Dakota Board of Regents

EXISTING PROGRAM: SUBSTANTIVE PROGRAM MODIFICATION

This form is used to request substantive changes in already existing programs (majors, minors, specializations).

1. INSTITUTION: **SDSM&T**

2. CURRENT PROGRAM NAME: **M.S. in Mechanical Engineering**

3. THIS PROPOSAL DEALS WITH A CHANGE IN:

Distribution of Credits

_____ total credits required within the discipline	_____ Program name
_____ total credits of supportive course work	_____ Existing specialization
_____ total credits of elective course work	_____ Addition of specialization
_____ total credits required for program	<u> X </u> Other (explain)

4. LEVEL:

_____ Certificate
 _____ Associate Degree
 _____ Bachelor's Degree
 X Master's Degree
 _____ Doctoral Degree

5. CATEGORY:

_____ Minor
 X Major
 _____ Specialization

6. EFFECTIVE DATE OF CHANGE: Spring 2015

7. IF A NAME CHANGE IS PROPOSED, THIS WILL OCCUR:

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

8. PRIMARY ASPECTS OF THE MODIFICATION:

Existing Curriculum**Program requirements for non-thesis MS Mechanical Engineering option**

The requirements for the non-thesis M.S. ME degree are as follows

1. 32 credit hours of coursework
2. 4 credits hours of project research required; no more than 4 credits may be counted toward degree requirements
3. Maximum of 9 credits at the 400/500 level
4. Minimum 19 credits at the 600/700 level
5. Satisfactory completion of a research project

Program requirements for thesis MS Mechanical Engineering option

The requirements for the thesis M.S. ME degree are as follows

1. 30 credit hours of coursework and research
2. 6 credits hours of thesis research (ME798) required; no more than 6 may count toward degree requirements
3. Maximum of 9 credits at the 400/500 level
4. Minimum 15 credits at the 600/700 level
5. Satisfactory completion of a thesis and thesis defense

**Proposed Curriculum (Highlight Changes)
Program requirements for non-thesis MS Mechanical Engineering option**

The requirements for the non-thesis M.S. ME degree are as follows

1. 32 credit hours of coursework
2. 4 credits hours of project research required; no more than 4 credits may be counted toward degree requirements
3. Maximum of 9 credits at the 400/500 level
4. Minimum 19 credits at the 600/700 level
5. Satisfactory completion of a research project

Program requirements for Accelerated MS Mechanical Engineering option, non-thesis

6. Students admitted to the accelerated program may apply up to 9 credits of 400/500/600 level coursework taken as an undergraduate for degree requirements to non-thesis option.
7. All elective courses must be approved in advance of registration by the student's major professor or program coordinator.

Program requirements for thesis MS Mechanical Engineering option

The requirements for the thesis M.S. ME degree are as follows

1. 30 credit hours of coursework and research
2. 6 credits hours of thesis research (ME798) required; no more than 6 may count toward degree requirements
3. Maximum of 9 credits at the 400/500 level
4. Minimum 15 credits at the 600/700 level
5. Satisfactory completion of a thesis and thesis defense

Program requirements for Accelerated MS Mechanical Engineering option, thesis

6. Students admitted to the accelerated program may apply up to 9 credits of 400/500/600 level coursework taken as an undergraduate for degree requirements to either the thesis or non-thesis option.
All elective courses must be approved in advance of registration by the student's major professor or program coordinator.

--	--

Total number of hours required for degree (non-thesis)	32
Total number of hours required for degree (thesis)	30
Total number of hours required for degree (accelerated)	N/A

Total number of hours required for degree (non-thesis)	32
Total number of hours required for degree (thesis)	30
Total number of hours required for degree (non-thesis accelerated)	32
Total number of hours required for degree (thesis accelerated)	30

9. EXPLANATION OF THE CHANGE:

This program modification implements the ME department support of SDSM&T’s new accelerated master’s initiative by adding a new MSME accelerated option to either the thesis or non-thesis option existing Mechanical Engineering MS program at SDSM&T.

Dr. Richard Sinden
 Institutional Authorization (President or Designee)

02/24/2015
 Date Submitted