



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

Institutional Substantive Program Modification Requests

Institution: South Dakota School of Mines & Technology ***Date:*** 4/8/2020

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.

<i>Program Title</i>	<i>Approval</i>
AES MS Program Atmospheric and Environmental Sciences	JP

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.



Signature: System Vice President for Academic Affairs

6/17/2020

Date



**SOUTH DAKOTA BOARD OF REGENTS
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Substantive Program Modification Form

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

UNIVERSITY:	SDSM&T
CURRENT PROGRAM TITLE:	Atmospheric and Environmental Sciences
CIP CODE:	40.0401 // 03.0104
UNIVERSITY DEPARTMENT:	Atmospheric and Environmental Sciences Program
BANNER DEPARTMENT CODE:	MAES
UNIVERSITY DIVISION:	
BANNER DIVISION CODE:	

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.

<hr/> Vice President of Academic Affairs or President of the University	Click here to enter a date. <hr/> Date
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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 checked="" type="checkbox"/> Existing specialization |
| <input type="checkbox"/> CIP Code | <input type="checkbox"/> Other (explain below) |

2. Effective date of change: 6/23/2020

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):

CATALOG LISTING

<i>Existing Curriculum</i>	<i>Proposed Curriculum (highlight changes)</i>
<p>Program requirements for MS Atmospheric and Environmental Science</p> <p><u>Requirements for the M.S. degree in Atmospheric and Environmental Sciences</u></p> <p><i>Thesis Option requirements (both Meteorology and Environmental Science specializations)</i></p> <ul style="list-style-type: none"> • 32 credit hours of course work and thesis research as approved by the student’s graduate advisory committee. <ul style="list-style-type: none"> ○ Fifteen credit hours of coursework in atmospheric and environmental sciences (AES prefix) at the 500-level or above. ○ <i>Registration in 2 credits of AES 690 Seminar (offered in the spring semester only).</i> ○ Six to nine additional credit hours of non-atmospheric and environmental sciences electives at the 400-level or above (300-level non-atmospheric sciences courses can be accepted if approved by the Council on Graduate Education), or atmospheric and environmental sciences electives at the 500-level. (Please note undergraduate credit limitations given under “Advanced Degree Grade Requirements” heading on the Graduate Policies for master of science degrees.) ○ Thesis research — 6-9 credit hours. 	<p>Program requirements for MS Atmospheric and Environmental Science</p> <p>1) Thesis Option</p> <ul style="list-style-type: none"> • AES Core Coursework (5 Credits) <ul style="list-style-type: none"> ○ <i>AES 406/506 Global and Environmental Change; Credits: (3-0) 3</i> ○ <i>AES 690 Seminar; Credits: (1-0) 1, Taken twice during program of study</i> • AES-Prefix Elective Coursework (15 Credits) <ul style="list-style-type: none"> ○ 15 additional AES-prefix course hours at 500-level or above. • Elective Coursework (3-6 Credits) <ul style="list-style-type: none"> ○ 3-6 additional credit hours of committee-approved coursework. • Master’s Thesis (6-9 Credits) <ul style="list-style-type: none"> ○ 6-9 Credit Hours of <i>AES 798 Thesis Research</i> ○ Completion of a master’s thesis. <p>2) Non-Thesis Option</p> <ul style="list-style-type: none"> • AES Core Coursework (5 Credits) <ul style="list-style-type: none"> ○ <i>AES 406/506 Global and Environmental Change; Credits: (3-0) 3</i> ○ <i>AES 690 Seminar; Credits: (1-0) 1, Taken twice during program of study</i> • AES-Prefix Elective Coursework (15 Credits) <ul style="list-style-type: none"> ○ 15 additional AES-prefix course hours at 500-level or above. • Elective Coursework (9 Credits) <ul style="list-style-type: none"> ○ 9 additional credit hours of advisor-approved coursework. • Master’s Research Project (3 Credits)

- Selection of a graduate committee and completion of a Program of Study by mid-term of the second semester at SDSM&T.
- Completion of a master's thesis. The thesis must adhere to the format and content guidelines as set forth by the graduate school, and be approved by the student's graduate advisory committee and the Dean of Graduate Education.

- *Specific requirements for the Meteorology Specialization*

All students are required to complete AES 506 *Global and Environmental Change* and a course focused on computer applications for research. This includes one of AES 519 *Computing Methods in Atmospheric Sciences*, or another appropriate course involving computer applications as approved by the student's graduate advisory committee.

Students entering the program with a bachelor's degree in fields outside of atmospheric sciences or meteorology must take the following courses: AES 450 *Synoptic Meteorology I* (not for graduate credit), AES 501 *Atmospheric Physics*, AES 555 *Synoptic Meteorology II*, and AES 560 *Atmospheric Dynamics*. Additional coursework may be determined by the student's graduate advisory committee.

- *Specific requirements for the Environmental Science Specialization*

All students are required to complete AES 506 *Global Environmental Change*. Additional coursework will be decided by the student's graduate advisory committee and outlined in the student's program of study.

Non-thesis MS option (both Meteorology and Environmental Science specializations):

1. *Up to 3 credits may be counted for research related activities.*
2. *2 Credit Hours Applied to AES 690 Seminar*
3. *A scholarly paper will be required for the non-thesis option*
4. *For the Meteorology Specialization, the following courses are required: AES 501, AES 506, AES 519, AES 530, AES 555, and AES 560.*
5. *For the Environmental Science Specialization, the following courses are required AES 503, AES 506, AES 775.*

Accelerated MS option (both Meteorology and Environmental Sciences specializations)

o 3 Credit Hours of AES 788 *Master's Research Project*

3) Accelerated MS Provisions For All Degree Options

- Accelerated MS Students admitted to the accelerated program may apply up to 9 credits of approved 400/500/600 level AES course work to the M.S.

<p>1. <u>Students admitted to the “accelerated” program may apply up to 9 credits of approved 400/500/600 level AES course work taken as undergraduate or approved electives for the B.S. degree requirements to the M.S.</u></p> <p>2. <u>All elective courses must be approved in advance of registration by major professor or program coordinator.</u></p>	
4)	

COURSEWORK LISTING

Existing Curriculum

Proposed Curriculum *(highlight changes)*

M.S. in AES (Environmental Sciences: Thesis)				M.S. in AES (Thesis Option)			
Prof.	Num.	Title	Cr. Hrs.	Prof.	Num.	Title	Cr. Hrs.
AES	506	Global Environmental Change	3	AES	506	Global Environmental Change	3
AES	690	Seminar	2	AES	690	Seminar	2
*	*	AES Environmental Science Specialization Courses or Approved Electives (See above program description)	18-21	AES	5-7/*	AES-Prefix Electives at the 500-level or above	15
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AES	798	Thesis Research	6-9	AES	798	Thesis Research	6-9
Total Hours Required			32	Total Hours Required			32

M.S. in AES (Environmental Sciences: Non-Thesis)				M.S. in AES (Non-Thesis)			
Prof.	Num.	Title	Cr. Hrs.	Prof.	Num.	Title	Cr. Hrs.
AES	506	Global Environmental Change	3	AES	506	Global Environmental Change	3
AES	690	Seminar	2	AES	690	Seminar	2
AES	503	Biogeochemistry	3	AES	5-7/*	AES-Prefix Electives at 500-level or above	15
AES	775	Applied Freshwater Science	3	*	*	Advisor-Approved Electives	9
*	*	AES Approved Electives	18	---	---	-----	---
AES	788	Master’s Research Project	3	AES	788	Master’s Research Project	3
Total Hours Required			32	Total Hours Required			32

M.S. in AES (Thesis Option: Meteorology)			
Prof.	Num.	Title	Cr. Hrs.
AES	506	Global Environmental Change	3
AES	690	Seminar	2
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AES	519 or 520	Computing Methods in Atmospheric Sciences Or Remote Sensing for Research	3
		AES Environmental Science Specialization Courses or Approved Electives (See above program description)	
*	*	AES Meteorology Specialization Courses or Approved Electives (See above program description)	18-21

AES	798	Thesis Research	6-9
Total Hours Required			32

M.S. in AES (Meteorology: Non-Thesis)			
Pref.	Num.	Title	Cr. Hrs.
AES	506	Global Environmental Change	3
AES	690	Seminar	2
AES	501	Atmospheric Physics	3
AES	519	Computing Methods in Atmospheric Sciences	3
AES	530	Radar Meteorology	3
AES	555	Synoptic Meteorology II	3
AES	560	Atmospheric Dynamics	3
*	*	AES Approved Electives	9
AES	788	Master's Research Project	3
Total Hours Required			32

7. Explanation of the Change:

This change removes the two specializations (Environmental Science, and Meteorology) from the Degree Program.