



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

**Substantive Program Modification Form**

<b>UNIVERSITY:</b>	<b>SDSU</b>
<b>CURRENT PROGRAM TITLE:</b>	<b>Ecology and Environmental Science (B.S.)</b>
<b>CIP CODE:</b>	<b>03.0104</b>
<b>UNIVERSITY DEPARTMENT:</b>	<b>Natural Resource Management</b>
<b>BANNER DEPARTMENT CODE:</b>	<b>SNAR</b>
<b>UNIVERSITY DIVISION:</b>	<b>Agriculture, Food &amp; Environmental Science</b>
<b>BANNER DIVISION CODE:</b>	<b>3F</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.*

\_\_\_\_\_  
 Dennis D. Hedge  
 Vice President of Academic Affairs or  
 President of the University

\_\_\_\_\_  
 3/24/2021  
 Date

**1. This modification addresses a change in:**

- |  |  |
|--|--|
| <input checked="" 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 type="checkbox"/> Other (explain below)                   |

2. **Effective date of change:** 2021-2022 Academic Year

3. **Program Degree Level:** Associate  Bachelor's  Master's  Doctoral

4. **Category:** Certificate  Specialization  Minor  Major

**5. If a name change is proposed, the change 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)

Proposed new name:

**6. Primary Aspects of the Modification:**

*Existing Curriculum*

*Proposed Curriculum (Highlight Changes)*

Pref	Num	Title	Cr Hrs	Pref	Num	Title	Cr Hrs		
<b>System General Education Requirements</b>				<b>32-34</b>	<b>System General Education Requirements</b>				<b>32-34</b>
ENGL	101	Composition I (SGR #1)	3	ENGL	101	Composition I (SGR #1)	3		
ENGL	201	Composition II (SGR #1)	3	ENGL	201	Composition II (SGR #1)	3		
SPCM	101	Fundamentals of Speech (SGR #2)	3	<b>CMST</b>	101	Fundamentals of Speech (SGR #2)	3		
		Student Choice (SGR #3)	3			Student Choice (SGR #3)	3		
		Student Choice (SGR #3)	3			Student Choice (SGR #3)	3		
		Student Choice (SGR #4)	3			Student Choice (SGR #4)	3		
		Student Choice (SGR #4)	3			Student Choice (SGR #4)	3		

*Existing Curriculum*

*Proposed Curriculum (Highlight Changes)*

Pref	Num	Title	Cr Hrs	Pref	Num	Title	Cr Hrs
MATH OR MATH OR MATH OR MATH	114 115 121-121L 123	College Algebra (3) (SGR #5) Precalculus (5) (SGR #5) Survey of Calculus (5) (SGR #5) Calculus I (4) (SGR #5)	3-5	MATH OR MATH OR MATH	114 115 121-121L 123	College Algebra (3) (SGR #5) Precalculus (5) (SGR #5) Survey of Calculus (5) (SGR #5) Calculus I (4) (SGR #5)	3-5
BIOL	151-151L	General Biology I & Lab (SGR #6)	4	BIOL	151-151L	General Biology I & Lab (SGR #6)	4
CHEM OR CHEM	106-106L 112-112L	Chemistry Survey & Lab (4) (SGR #6) General Chemistry & Lab (4) SGR #6)	4	CHEM OR CHEM	106-106L 112-112L	Chemistry Survey & Lab (4) (SGR #6) General Chemistry & Lab (4) SGR #6)	4
<b>College Requirements</b>			<b>0</b>	<b>College Requirements</b>			<b>0</b>
<p>Students seeking the Bachelor of Science degree must complete the System General Education Requirements. In some majors, the student must select a “specialization.” Additional requirements for both Bachelor of Science degrees follow.</p> <ol style="list-style-type: none"> <li>The requirements of one of the College’s majors must be met. Specific requirements are listed under each program of study.</li> <li>25 semester credits must be upper division (300 and above), with the exception that MATH 125 and 225, Calculus II and III, may be counted as five credits toward the total.</li> </ol> <p><b>Bachelor of Science in Agriculture, Food and Environmental Sciences</b> Students must complete a minimum of 11 credits from the approved list of Group 1 courses in Agriculture, Food and Environmental Science. Some departments require specific courses from the list, whereas others leave the selection entirely to the student and the advisor (see Group 1 List in Catalog).</p> <ul style="list-style-type: none"> <li>ABS 475-475L - Integrated Natural Resource Management and Lab Credits: 3 (Major Requirement)</li> <li>EES 275 - Introduction to Environmental Science Credits: 3 (Major Requirement)</li> <li>NRM 282-282L - Natural Resource Statistics and Lab Credits: 3 (Major Requirement)</li> <li>PS 213-213L - Soils and Lab [SGR #6] Credits: 2, 1 (Major Requirement)</li> </ul>				<p>Students seeking the Bachelor of Science degree must complete the System General Education Requirements. In some majors, the student must select a “specialization.” Additional requirements for both Bachelor of Science degrees follow.</p> <ol style="list-style-type: none"> <li>The requirements of one of the College’s majors must be met. Specific requirements are listed under each program of study.</li> <li>25 semester credits must be upper division (300 and above), with the exception that MATH 125 and 225, Calculus II and III, may be counted as five credits toward the total.</li> </ol> <p><b>Bachelor of Science in Agriculture, Food and Environmental Sciences</b> Students must complete a minimum of 11 credits from the approved list of Group 1 courses in Agriculture, Food and Environmental Science. Some departments require specific courses from the list, whereas others leave the selection entirely to the student and the advisor (see Group 1 List in Catalog).</p> <ul style="list-style-type: none"> <li>ABS 475-475L - Integrated Natural Resource Management and Lab Credits: 3 (Major Requirement)</li> <li>EES 275 - Introduction to Environmental Science Credits: 3 (Major Requirement)</li> <li>NRM 282-282L - Natural Resource Statistics and Lab Credits: 3 (Major Requirement)</li> <li>PS 213-213L - Soils and Lab [SGR #6] Credits: 2, 1 (Major Requirement)</li> </ul>			
<b>Major Requirements</b>			<b>76-79</b>	<b>Major Requirements</b>			<b>75-78</b>
ABS	475-475L	Integrated Natural Resource Management & Lab	3	ABS	475-475L	Integrated Natural Resource Management & Lab	3
BIOL OR BOT OR NRM	153-153L 201-201L 200-200L	General Biology II & Lab (4) General Botany I & Lab (3) Animal Diversity & Lab (3)	3-4	BIOL OR BOT OR NRM	153-153L 201-201L 200-200L	General Biology II & Lab (4) General Botany I & Lab (3) Animal Diversity & Lab (3)	3-4
PHIL OR PHIL	383 454	Bioethics (4) Environmental Ethics (3)	3-4	PHIL OR PHIL	383 454	Bioethics (4) Environmental Ethics (3)	3-4
CHEM OR CHEM	108-108L 114-114L	Organic and Biochemistry & Lab (5) General Chemistry II & Lab (4)	4-5	CHEM OR CHEM	108-108L 114-114L	Organic and Biochemistry & Lab (5) General Chemistry II & Lab (4)	4-5
EES	275	Introduction to Environmental Science	3	EES	275	Introduction to Environmental Science	3

## Existing Curriculum

## Proposed Curriculum (Highlight Changes)

Pref	Num	Title	Cr Hrs	Pref	Num	Title	Cr Hrs
EES	425-425L	Disturbance & Restoration Ecology & Lab	3	EES	425-425L	Disturbance & Restoration Ecology & Lab	3
EES or EES or EES or EES	491 494 496 498	Independent Study Internship Field Experience Undergraduate Research/Scholarship	1	EES or EES or EES or EES	491 494 496 498	Independent Study Internship Field Experience Undergraduate Research/Scholarship	1
GEOG	372-372L	Introduction to GIS & Lab	3	GEOG	372-372L	Introduction to GIS & Lab	3
NRM	119	Orientation to Natural Resource Management	2	NRM	119	Orientation to Natural Resource Management	2
NRM	230	Natural Resource Field Techniques	3	NRM	230	Natural Resource Field Techniques	2
NRM	276	Scientific Communications	1	NRM	276	Scientific Communications	1
NRM	282-282L	Natural Resource Management Statistics & Lab	3	NRM	282-282L	Natural Resource Management Statistics & Lab	3
NRM	300	Laws and Policies in Natural Resource Management	3	NRM	300	Laws and Policies in Natural Resource Management	3
NRM	311	Principles of Ecology	3	NRM	311	Principles of Ecology	3
NRM	464	Ecosystem Ecology	3	NRM	464	Ecosystem Ecology	3
PHYS OR PHYS	101-101L 111-111L	Survey of Physics & Lab (4) Introduction to Physics & Lab (4)	4	PHYS OR PHYS	101-101L 111-111L	Survey of Physics & Lab (4) Introduction to Physics & Lab (4)	4
PS	213-213L	Soils & Lab	3	PS	213-213L	Soils & Lab	3
PS	243	Principles of Geology	3	PS	243	Principles of Geology	3
<b>Major Electives</b>			<b>25</b>	<b>Major Electives</b>			<b>25</b>
Select a minimum of <u>25 credits</u> from the following courses. (*Course requires additional prerequisites or Instructor Consent.)				Select a minimum of <u>25 credits</u> from the following courses. (*Course requires additional prerequisites or Instructor Consent.)			
AST	353-353L	Physical Climate Meteorology & Lab	3	AST	353-353L	Physical Climate Meteorology & Lab	3
BIOL	202-202L	Genetics and Cellular Biology & Lab	4	BIOL	202-202L	Genetics and Cellular Biology & Lab	4
BIOL	373	Evolution	3	BIOL	373	Evolution	3
BOT	201-201L	General Botany & Lab	3	BOT	201-201L	General Botany & Lab	3
BOT	301-301L	Plant Systematics & Lab	4	BOT	301-301L	Plant Systematics & Lab	4
BOT	327-327L	Plant Physiology & Lab	4	BOT	327-327L	Plant Physiology & Lab	4
BOT	405-405L	Grasses and Grasslike Plants & Lab	3	BOT	405-405L	Grasses and Grasslike Plants & Lab	3
BOT	415-415L	Aquatic Plants & Lab	3	BOT	415-415L	Aquatic Plants & Lab	3
BOT	419-419L	Plant Ecology & Lab	3	BOT	419-419L	Plant Ecology & Lab	3
CEE	323-323L	Water Supply and Wastewater Engineering & Lab *	3	CEE	323-323L	Water Supply and Wastewater Engineering & Lab	3
CEE	422-422L	Environmental Engineering Instrumentation & Lab *	3	CEE	422-422L	Environmental Engineering Instrumentation & Lab	3
CEE	434	Hydrology *	3	CEE	434	Hydrology	3
CHEM	326-326L	Organic Chemistry I	4	CHEM	326-326L	Organic Chemistry I	4
CHEM	328-328L	Organic Chemistry II *	4	CHEM	328-328L	Organic Chemistry II	4
CHEM	332-332L	Analytical Chemistry & Lab	3,1	CHEM	332-332L	Analytical Chemistry & Lab	3,1
CHEM	464	Biochemistry I *	3	CHEM	464	Biochemistry I	3
CHEM	482	Environmental Chemistry *	3-4	CHEM	482	Environmental Chemistry	3-4
EES	430-430L	Biological Invasions & Lab	3	EES	430-430L	Biological Invasions & Lab	3
EES	491	Independent Study	1-3	EES	491	Independent Study	1-3
EES	494	Internship	1-3	EES	494	Internship	1-3
EES	496	Field Experience		EES	496	Field Experience	
EES	498	Undergraduate Res	1-3	EES	498	Undergraduate Res	1-3
GEOG	473-473L	Data Creation & Integration & Lab	3	GEOG	473-473L	Data Creation & Integration & Lab	3
GEOG	474-474L	Vector Raster Modeling & Lab	3	GEOG	474-474L	Vector Raster Modeling & Lab	3

## Existing Curriculum

## Proposed Curriculum (Highlight Changes)

Pref	Num	Title	Cr Hrs	Pref	Num	Title	Cr Hrs
GEOG	475-475L	GIS Applications & Lab	3	GEOG	475-475L	GIS Applications & Lab	3
GEOG	484-484L	Remote Sensing & Lab	3	GEOG	484-484L	Remote Sensing & Lab	3
HLTH	443	Public Health Science	3	HLTH	443	Public Health Science	3
HLTH	445	Epidemiology	3	HLTH	445	Epidemiology	3
LA	331	Landscape Architecture Site Engineering	3	LA	331	Landscape Architecture Site Engineering	3
LA	341	Public and Social Place Design	3	LA	341	Public and Social Place Design	3
LA	352	Planting and Ecological Design	4	LA	352	Planting and Ecological Design	4
MICR	231-231L	General Microbiology & Lab	4	MICR	231-231L	General Microbiology & Lab	4
MICR	310-310L	Environmental Microbiology & Lab*	4	MICR	310-310L	Environmental Microbiology & Lab*	4
MICR	421-421L	Soil Microbiology & Lab	3	MICR	421-421L	Soil Microbiology & Lab	3
NRM	200-200L	Animal Diversity & Lab	3	NRM	200-200L	Animal Diversity & Lab	3
NRM	350	Conservation and Management of Endangered and Nongame Wildlife	3	NRM	350	Conservation and Management of Endangered and Nongame Wildlife	3
NRM	450-450L	Freshwater Monitoring and Assessment & Lab	3	NRM	450-450L	Freshwater Monitoring and Assessment & Lab	3
NRM	466	Environmental Toxicology and Contaminants	3	NRM	466	Environmental Toxicology and Contaminants	3
NRM	482-482L	Natural Resource Management Biometry & Lab	3	NRM	482-482L	Natural Resource Management Biometry & Lab	3
PS	462-462L	Environmental Soil Management & Lab	3	PS	462-462L	Environmental Soil Management & Lab	3
PS	412	Environmental Soil Chemistry	3	PS	412	Environmental Soil Chemistry	3
RANG	374-374L	Habitat Conservation & Management	4	RANG	374-374L	Habitat Conservation & Management	4
RANG	425-425L	Rangeland Assessment and Monitoring & Lab	3	RANG	425-425L	Rangeland Assessment and Monitoring & Lab	3
STAT	381	Introduction Probability and Statistics*	3	STAT	381	Introduction Probability and Statistics*	3
STAT	414	Basic R Programming	1	STAT	414	Basic R Programming	1
STAT	441	Statistical Methods II	3	STAT	441	Statistical Methods II	3
STAT	445	Nonparametric Statistics	3	STAT	445	Nonparametric Statistics	3
WL	355-355L	Mammalogy & Lab	3	WL	355-355L	Mammalogy & Lab	3
WL	363-363L	Ornithology & Lab	4	WL	363-363L	Ornithology & Lab	4
WL	367-367L	Ichthyology & Lab	3	WL	367-367L	Ichthyology & Lab	3
WL	417-417L	Large Mammal Ecology & Lab	3	WL	417-417L	Large Mammal Ecology & Lab	3
WL	418-418L	Ecology of Aquatic Invertebrates	3	WL	418-418L	Ecology of Aquatic Invertebrates	3
WL	419-419L	Waterfowl Ecology & Management & Lab	3	WL	419-419L	Waterfowl Ecology & Management & Lab	3
WL	427-427L	Limnology & Lab	3	WL	427-427L	Limnology & Lab	3
WL	434-434L	Herpetology & Lab	3	WL	434-434L	Herpetology & Lab	3
<b>Electives</b>			<b>7-12</b>	<b>Electives</b>			<b>8-13</b>
<b>Summary of Credits Ecology and Environmental Science (B.S.)</b>							
<b>System General Education Requirements</b>			<b>32-34</b>	<b>System General Education Requirements</b>			<b>32-34</b>
<b>College Requirements</b>			<b>0</b>	<b>College Requirements</b>			<b>0</b>
<b>Major Requirements</b>			<b>76-79</b>	<b>Major Requirements</b>			<b>75-78</b>
<b>Electives</b>			<b>7-12</b>	<b>Electives</b>			<b>8-13</b>
Total number of hours required for major			76-79	Total number of hours required for major			75-78
Total number of hours required for degree			120	Total number of hours required for degree			120

## 7. Explanation of the Change:

NRM 230 Natural Resource Management Techniques is being changed from 3 to 2 credits.