



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

Substantive Program Modification Form

UNIVERSITY:	SDSU
CURRENT PROGRAM TITLE:	Ecology and Environmental Science (B.S.) - Rangeland Ecology and Management Specialization
CIP CODE:	03.0104 – EES Major 01.1106 - Rangeland Ecology and Management Specialization
UNIVERSITY DEPARTMENT:	Natural Resource Management
BANNER DEPARTMENT CODE:	SNAR
UNIVERSITY DIVISION:	Agriculture, Food & Environmental Science
BANNER DIVISION CODE:	3F

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

3/25/2020

Vice President of Academic Affairs or
President of the University

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 checked="" type="checkbox"/> Existing specialization |
| <input type="checkbox"/> CIP Code | <input type="checkbox"/> Other (explain below) |

2. Effective date of change: 2020-2021 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 (add lines or adjust cell size as needed):

Existing Curriculum

Proposed Curriculum (Highlight Changes)

Pref	Num	Title	Cr Hrs	Pref	Num	Title	Cr Hrs
System General Education Requirements				System General Education Requirements			
	32				32		
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	SPCM	101	Fundamentals of Speech (SGR #2)	3
ECON	201	Principles of Economics (SGR #3)	3	ECON	201	Principles of Economics (SGR #3)	3

Existing Curriculum

Proposed Curriculum (Highlight Changes)

Pref	Num	Title	Cr Hrs	Pref	Num	Title	Cr Hrs
SOC OR SOC OR SOC	100 150 240	Intro to Sociology (3) (SGR #3) Social Problems (3) (SGR #3) The Sociology of Rural America (3) (SGR #3)	3	SOC OR SOC OR SOC	100 150 240	Intro to Sociology (3) (SGR #3) Social Problems (3) (SGR #3) The Sociology of Rural America (3) (SGR #3)	3
		Student Choice (SGR #4)	3			Student Choice (SGR #4)	3
		Student Choice (SGR #4)	3			Student Choice (SGR #4)	3
MATH	114	College Algebra (SGR #5) or higher	3	MATH	114	College Algebra (SGR #5) or higher	3
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
College Requirements			0	College Requirements			0
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.				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.			
1. The requirements of one of the College's majors must be met. Specific requirements are listed under each program of study.				3. The requirements of one of the College's majors must be met. Specific requirements are listed under each program of study.			
2. 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.				4. 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.			
Bachelor of Science in Agriculture, Food and Environmental Sciences				Bachelor of Science in Agriculture, Food and Environmental Sciences			
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).				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).			
<ul style="list-style-type: none"> ABS 475-475L - Integrated Natural Resource Management and Lab Credits: 3 (Major Requirement) NRM 282-282L - Natural Resource Statistics and Lab Credits: 3 (Major Requirement) PS 213-213L - Soils and Lab [SGR #6] Credits: 2, 1 (Major Requirement) RANG 205 - Introduction to Range Management [SGR #6] Credits: 3 (Major Requirement) 				<ul style="list-style-type: none"> ABS 475-475L - Integrated Natural Resource Management and Lab Credits: 3 (Major Requirement) NRM 282-282L - Natural Resource Statistics and Lab Credits: 3 (Major Requirement) PS 213-213L - Soils and Lab [SGR #6] Credits: 2, 1 (Major Requirement) RANG 205 - Introduction to Range Management [SGR #6] Credits: 3 (Major Requirement) 			
Major Requirements			76-78	Major Requirements			79-81
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
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	425-425L	Disturbance & Restoration Ecology & Lab	3	EES	425-425L	Disturbance & Restoration Ecology & Lab	3

Existing Curriculum

Proposed Curriculum (Highlight Changes)

Pref	Num	Title	Cr Hrs	Pref	Num	Title	Cr Hrs
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	2	NRM	230	Natural Resource Field Techniques	2
				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	311L	Principles of Ecology Lab	1	NRM	311L	Principles of Ecology Lab	1
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
RANG	205	Introduction to Range Management	3	RANG	205	Introduction to Range Management	3
RANG	210-210L	Range Plant Identification and Lab	2	RANG	210-210L	Range Plant Identification and Lab	2
RANG	215	Introduction to Integrated Ranch Management	3	RANG	215	Introduction to Integrated Ranch Management	3
				RANG	321	Wildland Ecosystems	3
RANG	374-374L	Habitat Conservation and Management and Lab	3	RANG	374-374L	Habitat Conservation and Management and Lab	4
RANG	400	Judging Teams	1	RANG	400	Judging Teams	1
				RANG	421	Grassland Fire Ecology	3
RANG	425-425L	Rangeland Assessment and Monitoring and Lab	3	RANG	425-425L	Rangeland Assessment and Monitoring and Lab	3
				RANG	491 or RANG 494 or RANG 496 or RANG 498	Independent Study Internship Field Experience Undergraduate Research/Scholarship	1
Supporting Coursework			22	Supporting Coursework			19
AS	101-101L	Introduction to Animal Science and Lab	3,1	AS	101-101L	Introduction to Animal Science and Lab	3,1
AS	218	Survey of Animal Nutrition	3	AS	218	Survey of Animal Nutrition	3
BOT	301-301L	Plant Systematics and Lab	3	BOT	301-301L	Plant Systematics and Lab	3
PRAG OR PS	410-410L 462-462L	Soil Geography and Land Use Interpretation and Lab Environmental Soil Management and Lab	2,1 3	PRAG OR PS	410-410L 462-462L	Soil Geography and Land Use Interpretation and Lab Environmental Soil Management and Lab	2,1 3
RANG OR RANG	321 421	Wildland Ecosystems Grassland Fire Ecology	3 3	RANG OR RANG	321 421-521	Wildland Ecosystems Grassland Fire Ecology	3 3
Select from the following (select 6 credits from the following courses. 6 credits)				Select from the following (select 6 credits from the following courses. 6 credits)			
AGEC	271	Farm and Ranch Management	3	AGEC	271	Farm and Ranch Management	3

Existing Curriculum

Proposed Curriculum (Highlight Changes)

Pref	Num	Title	Cr Hrs	Pref	Num	Title	Cr Hrs
BOT	303-303L	Forest Ecology and Management and Lab	3	BOT	303-303L	Forest Ecology and Management and Lab	3
PS	313	Forage Crop and Pasture Management	3	PS	313	Forage Crop and Pasture Management	3
WL	220	Introduction to Wildlife and Fisheries Management and Lab	3	WL	220	Introduction to Wildlife and Fisheries Management and Lab	3
Electives			10-12	Electives			7-9
Summary of Credits Ecology and Environmental Science (B.S.)							
System General Education Requirements			32	System General Education Requirements			32
College Requirements			0	College Requirements			0
Major Requirements			54-56	Major Requirements			60-62
Supporting Coursework			22	Supporting Coursework			19
Electives			10-12	Electives			7-9
Total number of hours required for major			76-78	Total number of hours required for major			79-81
Total number of hours required for degree			120	Total number of hours required for degree			120

Academic Requirements:

Students must achieve a grade of “C” or better in all major core courses.

7. Explanation of the Change:

A new course has been added to all programs within Natural Resource Management. NRM 276 Scientific Communications (1 cr.) will emphasize best practices in communicating science in written reports and oral presentations to prepare students for upper level natural resource management courses.

NRM 311L Principles of Ecology Lab (1 cr.) will no longer be offered at SDSU. Many of the techniques in NRM 311L are duplicated in current course offerings (NRM 230, BOT 419, RANG 425, WL 427). The workload needed to offer this class is being shifted to a new class.

RANG 374-374L Habitat Conservation and Management and Lab will increase from 3 to 4 credit hours. The current course structure is two 50-minute lectures and one 3-hour lab. The amount of lecture material that needs to be covered is not fitting into the current structure and the instructors are not able to go in depth to meet the Student Learning Outcomes (SLOs). Historically, this course had been 4-cr, three 50-minute lectures and one 2-hour lab. The Department thought they could achieve the SLOs under the current format, but assessment metrics (quizzes and exams scores) reveal that students are not thinking critically or developing the required level of understanding of course content.

RANG 321 Wildland Ecosystems (3 cr.) and RANG 421 Grassland Fire Ecology (3 cr.) were realigned from supporting coursework to the major requirements. Students will complete both courses.

The 49X prefix was revised in the major requirements from EES to RANG.