



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

New Baccalaureate Degree Minor

UNIVERSITY:	SDSU
TITLE OF PROPOSED MINOR:	Ranch Management
DEGREE(S) IN WHICH MINOR MAY BE EARNED:	Any
EXISTING RELATED MAJORS OR MINORS:	Agricultural Business (B.S. and minor), Agricultural Sciences (A.S. and B.S.), Animal Science (B.S. and minor), and Rangeland Ecology and Management (B.S. and minor)
INTENDED DATE OF IMPLEMENTATION:	2018-2019 Academic Year
PROPOSED CIP CODE:	01.0104
UNIVERSITY DEPARTMENT:	Animal Science
UNIVERSITY DIVISION:	College of Agriculture, Food & Environmental Sciences

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.

Barry H. Dunn

President of the University

5/16/2018

Date

- 1. Do you have a major in this field?** Yes No
- 2. If you do not have a major in this field, explain how the proposed minor relates to your university mission.**

South Dakota State University (SDSU) requests authorization to offer a baccalaureate minor in Ranch Management. The Ranch Management minor is proposed as a collaborative effort between the Departments of Animal Science, Economics, and Natural Resource Management. The proposed minor will provide undergraduate students with a breadth of knowledge critical for success as a ranch manager. The minor will appeal to students majoring in Agricultural Business, Agricultural Science, Animal Science, and Rangeland Ecology & Management.

The Ranch Management minor supports the mission of SDSU as provided in SDCL 13-58-1: *The legislature established South Dakota State University as the Comprehensive Land-Grant University to meet the needs of the State and region by providing undergraduate and graduate*

programs of instruction in the liberal arts and sciences and professional education in agriculture, aviation, education, engineering, human sciences, nursing, pharmacy, and other courses or programs as the Board of Regents may determine.

SDSU does not request new state resources.

3. What is the nature/purpose of the proposed minor?

The purpose of the proposed minor is to provide students with a broad, cross-disciplinary training that integrates financial management, grassland management and livestock management. Each of these components is critical to the success of ranching enterprises. An increasing number of students are seeking training in rangeland and ranch management to complement their more traditional Animal Science degree. There are also students in majors such as Agricultural Business and Rangeland Ecology & Management who are interested in the cross-disciplinary content provided in the Ranch Management minor.

4. How will the proposed minor benefit students?

The proposed Ranch Management Minor will benefit students by providing a more formal, strategically designed academic program. In addition, earning the minor will differentiate them in the marketplace after graduation. As discussed in the response to Question 5, demand for ranch managers is likely to increase. In 2012, there were 476 beef cattle operations and 197 sheep operations that had over 500 and 300 animals, respectively, in South Dakota alone. Nationally, there were 8,905 beef cattle operations and 740 sheep operations with over 500 animals. Furthermore, the average age of a farmer has increased to 58.3 in 2012.¹ These facts suggest the demand for ranch managers will increase over the next decade. While the number of operations may seem modest, the opportunities for students to obtain a comprehensive training in ranch management are even more so. A review of ranch management majors or minors yielded only 6 universities with majors, minors or concentrations in ranch management, livestock business management, or integrated resource management (Colorado State University, Montana State University, New Mexico State University, Texas Christian University, Texas Tech University, and the University of Wyoming). There are farm and ranch management programs across the country; however, the vast majority focus primarily on economic and financial management rather than a comprehensive understanding of the resource base, the livestock, and the business as a system. This is where students that complete the Ranch Management minor at SDSU will have an opportunity to differentiate themselves to those operations across the country looking for managers or prospective partners to operate their ranches.

5. Describe the workforce demand for graduates in related fields, including national demand and demand within South Dakota. Provide data and examples; data sources may include but are not limited to the South Dakota Department of Labor, the US Bureau of Labor Statistics, Regental system dashboards, etc.

According to the 2012 Census of Agriculture (USDA-NASS 2012), there are 13,584 cow-calf operations, 1,379 sheep operations, and 7067 operations that have horses, ponies, mules, burros, and donkeys in the state of South Dakota. The average age of a farmer has increased steadily from

51.7 in 1974 to 58.3 in 2012 (USDA-NASS 2012)¹. As producers reach retirement age, opportunities for men and women to step into management roles will increase. In some instances, students will be returning home to a family operation, yet students may also be hired as managers on operations where they have no family connection. Because of the nature of the livestock industry, it may be difficult to accurately assess demand for graduates in ranch management. However, based on the number of livestock operations in the state and the average age of producers involved in agriculture, it appears the demand will grow significantly over the next decade.

6. Provide estimated enrollments and completions in the table below and explain the methodology used in developing the estimates.

These estimates are based upon the 5-year average enrollment for AS/RANG 215, which is 30. Assuming approximately half of those students will enroll in the minor and a 25% annual growth in students enrolled in the proposed minor. These estimates may be conservative given the number of students that expressed interest in farming and ranching as their career choice. A 2015 survey of undergraduate students in the SDSU Department of Animal Science indicated that 44.3% of students would like to work in the cow-calf industry in some capacity after graduation. Another 21% hoped to work in the horse industry and 4% want to work with sheep. When asked about specific career paths, 18.1%, 10.5%, and 11.3% of Animal Science majors had farming or ranching as their first, second, or third choice respectively. Farming or ranching was the most popular choice among survey respondents. It is clear from these data that a significant number of students are interested in grassland livestock production. Furthermore, the number of Animal Science majors that have been enrolling in the Animal Science section of AS/RANG 215 – Introduction to Integrated Ranch Management, has been increasing. In 2013, there were a total of 45 students in AS/RANG 215, none were enrolled in the Animal Science section. Over the subsequent 5 years, the number of students that have enrolled in AS 215 vs RANG 215 has steadily risen to 15 out of the 35 students enrolled in the spring of 2018.

The minor will benefit and appeal to students majoring in Animal Science, Agricultural Business, Agricultural Science, and Rangeland Ecology & Management.

	Fiscal Years*			
	1 st	2 nd	3 rd	4 th
<i>Estimates</i>	FY 2019	FY 2020	FY 2021	FY 2022
Students enrolled in the minor (fall)	15	19	24	30
Completions by graduates	0	5	10	15

*Do not include current fiscal year.

7. What is the rationale for the curriculum? Demonstrate/provide evidence that the curriculum is consistent with current national standards.

The proposed minor is comprised of courses selected from three programs within the College of Agriculture, Food and Environmental Sciences. Students who earn the Ranch Management minor will develop a valuable knowledge base in the economics and financial management of a ranching operations, management of grassland resources, and the management of grazing livestock species.

¹ USDA-NASS. 2012. Census of Agriculture. United States Department of Agriculture National Agriculture Statistics Service. Available online at: <https://www.agcensus.usda.gov/Publications/2012/>. Accessed March 26, 2018.

While the courses in the proposed minor are all currently available to students, the Ranch Management Minor provides students with a package of courses that have been strategically selected to help them be successful as ranch managers. Courses selected for the proposed minor are intended not only to provide students with a breadth of knowledge in the field, but also provide pathways for students from any major to complete the program.

There is not a national accrediting body or organization that publishes guidelines for Ranch Management minors or degree programs. However, the curriculum in the proposed minor is very much in line with the Ranch Management minor at New Mexico State University, the Ranch Management Certificate at Texas Christian University, and the Integrated Resource Management minor at Colorado State University (Appendix B).

8. Complete the tables below. Explain any exceptions to Board policy requested.

A. Distribution of Credit Hours

Ranch Management Minor	Credit Hours	Percent
Requirements in minor	15	83.3%
Electives in minor	3	16.7%
Total	18	

B. Required Courses in the Minor

Prefix	Number	Course Title	Credit Hours	New (yes, no)
AGEC	271	Farm and Ranch Management	3	No
AGEC	354	Agricultural Marketing and Prices	3	No
AS/RANG	215	Introduction to Integrated Ranch Management	3	No
RANG	205	Introduction to Range Management	3	No
RANG	374-374L	Natural Resource Habitat Conservation, Management, and Restoration and Lab	3	No
Subtotal			15	

9. Elective Courses in the Minor: List courses available as electives in the program. Indicate any proposed new courses added specifically for the minor.

Select 3 credits from the following:

Prefix	Number	Course Title	Credit Hours	New (yes, no)
AS	264	Ruminant Livestock Production	3	No
AS	474-474L	Cow/Calf Management and Lab	3	No
AS	476-476L	Horse Production and Lab	3	No
AS	477-477L	Sheep and Wool Production and Lab	3	No

10. What are the learning outcomes expected for all students who complete the minor? How will students achieve these outcomes?

Upon successful completion of the Ranch Management minor, student will be able to:

- Develop a complete ranch management plan including a vision statement, key assumptions, marketing plan, operational plan, and financial plan.
- Describe and implement best management practices for financial data collection, reports and analysis.
- Describe and implement best management practices for grassland ecosystems.
- Describe and implement best management practices for animal husbandry practices for their species of choice.

11. What instructional approaches and technologies will instructors use to teach courses in the minor? *This refers to the instructional technologies and approaches used to teach courses and NOT the technology applications and approaches expected of students.*

Standard instructional technologies will be used in the courses that are included in the proposed minor. These include lecture, discussion, team-based learning, and experiential learning (e.g., hands-on laboratories and field trips).

12. Delivery Location²

A. Complete the following charts to indicate if the university seeks authorization to deliver the entire program on campus, at any off-campus location (e.g., UC Sioux Falls, Capital University Center, Black Hills State University-Rapid City, etc.) or deliver the entire program through distance technology (e.g., as an online program)?

	Yes/No	Intended Start Date
On campus	Yes	2018-2019 Academic Year

	Yes/No	If Yes, list location(s)	Intended Start Date
Off campus	No		

	Yes/No	If Yes, identify delivery methods ³	Intended Start Date
Distance Delivery (online/other distance delivery methods)	No		

B. Complete the following chart to indicate if the university seeks authorization to deliver more than 50% but less than 100% of the certificate through distance learning (e.g., as an online program)?⁴

	Yes/No	If Yes, identify delivery methods	Intended Start Date
Distance Delivery (online/other distance delivery methods)	Yes		

² The accreditation requirements of the Higher Learning Commission (HLC) require Board approval for a university to offer programs off-campus and through distance delivery.

³ Delivery methods are defined in [AAC Guideline 5.5](#).

⁴ This question responds to HLC definitions for distance delivery.

50% of the Ranch Management minor is available online. The courses included in the proposed Ranch Management Minor will all be taught on-campus in Brookings. However, some are offered online in the summer term (e.g., AGEC 271, AGEC 354, and AS 264).

13. Does the University request any exceptions to any Board policy for this minor? Explain any requests for exceptions to Board Policy. If not requesting any exceptions, enter "None."

None.

14. Cost, Budget, and Resources: Explain the amount and source(s) of any one-time and continuing investments in personnel, professional development, release time, time redirected from other assignments, instructional technology & software, other operations and maintenance, facilities, etc., needed to implement the proposed minor. Address off-campus or distance delivery separately.

No additional resources are needed. Courses in the Ranch Management minor are currently taught by faculty members in the Departments of Animal Science, Economics, and Natural Resource Management.

15. New Course Approval: New courses required to implement the new minor may receive approval in conjunction with program approval or receive approval separately. Please check the appropriate statement (place an "X" in the appropriate box).

- YES,
the university is seeking approval of new courses related to the proposed program in conjunction with program approval. All New Course Request forms are included as Appendix C and match those described in section 7.
- NO,
the university is not seeking approval of all new courses related to the proposed program in conjunction with program approval; the institution will submit new course approval requests separately or at a later date in accordance with Academic Affairs Guidelines.

Appendix A
Ranch Management Minor – Student Learning Outcomes

Individual Student Learning Outcomes	Required Coursework					Electives			
	AGEC 271	AGEC 354	AS/RANG 215	RANG 205	RANG 374-374L	AS 264	AS 474-474L	AS 476-476L	AS 477-477L
Students will develop a complete ranch management plan including a vision statement, key assumptions, marketing plan, operational plan, and financial plan.			X						
Students will describe and implement best management practices for financial data collection, reports and analysis.	X	X	X						
Students will describe and implement best management practices for grassland ecosystems.				X	X				
Students will describe and implement best management practices for animal husbandry practices for their species of choice.						X	X	X	X

Appendix B – Example Curricula

Ranch Management Minor – New Mexico State University	
Course	Credits
<i>Required Courses</i>	
Introductory Animal Science	3
Feeds and Feeding	3
<i>Production Electives (Choose 2)</i>	
Horse Science and Management	3
Beef Production: Cow-Calf Management	3
Sheep and Wool Production	3
Beef Production: Feedlot Management	3
<i>Range Electives (Choose 1)</i>	
Forestry and Society	3
Rangeland Plants	3
Rangeland Communities	3
Watershed Management	3
Rangeland Resource Ecology	3
Total	18

Ranch Management Certificate – Texas Christian University	
Course	Credits
Ranch Operations and Development	2
Soil and Water Conservation	3
Beef Cattle Production	3
Animal Health Management	3
Range Management	3
Ranch Records and Finance	3
Animal Nutrition and Feeding	3
Management Plan Capstone Course	1
Sheep and Goat Production	2
Animal Health and Reproduction	3
Forage Production and Use	3
Ranch Business Management	3
Marketing of Livestock and Meats	3
Total	35

Integrated Resource Management Minor – Colorado State University	
Course	Credits
Fundamentals of Ecology	3
Introductory Soil Science or Forage and Pasture Management	3-4
U.S. Travel – Integrated Resource Management	2
Topics in Animal Sciences: Family Ranching	1
Sheep Systems or Beef Systems	3
Agricultural and Resource Enterprise Analysis	3
Agricultural Marketing	3
Agricultural Policy	3
Rangeland Conservation and Stewardship	3
Sociology of Rural Life	3
Total	27-28