

RANGELAND ECOLOGY AND MANAGEMENT MINOR

Offered at: San Luis Obispo Campus

This interdisciplinary minor prepares students for careers in the science and management of semi-arid grasslands, shrub lands, and savannas. This is an entry point for students into a wide range of careers in grassland-based livestock production and the conservation and management of rangeland ecosystems, including native wildlife and plant populations. Students will learn purposes for and methods of assessing the health and productivity of rangeland ecosystems, and how to manage the animals and plants that depend on them. Coursework in the minor will give students an understanding of the interactions of plants, animals, water, soil and landscape features in these ecosystems, with particular emphasis on the management of grazing animals. This minor will prepare students for careers with state and federal land and natural resource management agencies and non-governmental conservation organizations as scientists, resource specialists, and managers. It will also strengthen a graduate's opportunities in the private sector as agricultural or environmental consultants, ranch managers, and other natural resource management specialists. Completion of this minor meets the basic educational requirements for the state of California's Certified Rangeland Manager (CRM) license (<http://casrm.rangelands.org/HTML/certified.html>).

Program Learning Objectives

1. Explain components and processes of rangeland ecosystems and the management practices applied to them.
2. Describe how grazing can be manipulated to adjust ecosystem conditions and processes.
3. Develop rangeland improvement practices appropriate to management objectives.
4. Evaluate rangeland management plans based on historical and existing conditions and information from state-and-transition models.
5. Monitor changes in ecological conditions using objective methods.

Minor Requirements and Curriculum

The minor must be completed prior to, or at the same time as, the requirements for the bachelor's degree. A major and a minor may not be taken in the same degree program, and a minor is not required for a degree. Requirements for the minor include:

- At least half of the units must be from upper-division courses (3000-4000 level).
- At least half of the units must be taken at Cal Poly (in residence).
- No more than one-third of the units will be taken with credit-no credit grading (CR/NC), not counting courses with mandatory CR/NC. Departments may further limit CR/NC grading if desired.
- A minimum 2.0 GPA is required in all units counted for completion of the minor.

Code	Title	Units
REQUIRED COURSES		
ASCI 2232 or ASCI 2239	Small Ruminant and Rangeland Management ¹ Principles of Rangeland Management	3
BOT 1121	General Botany	4
SS 1120	Introductory Soil Science	4
Approved Electives		
Select from the following: ¹		13
ASCI 3311	Advanced Beef Cattle System Management	
ASCI 3370	Rangeland Improvements	
ASCI 3372	California Rangeland and Ranch Resource Management	
ASCI 4400	Special Problems for Advanced Undergraduates	
ASCI 4460	Rangeland Assessment and Planning	
ASCI 4470	Special Advanced Topics	
BIO 3327	Wildlife Ecology	
BIO 4427	Wildlife Management	
BIO 4447	Spatial Ecology	
BOT 3313	Plant Taxonomy	
BOT 3326	Plant Ecology	
BOT 4433	Field Botany: California Plant Diversity	
BRAE 3345	Photogrammetry and Remote Sensing with GIS Applications	
BRAE 4447	Advanced Surveying with GIS Applications	
LA 3312	Geographic Information Systems (GIS) Applications for Design Projects	
LA/NR 3317	The World of Spatial Data and Geographic Information Technology	

LA 5538	Advanced GIS Application to Projects
NR 3306	Natural Resource Ecology and Habitat Management
NR 4418	Applied Geographic Information System
SS 3321	Soil Morphology
SS 4440	Forest and Range Soils

Total Units**24**

¹ Additional prerequisites may be needed to complete this requirement.