COURSE INFORMATION:

Title: High Latitude Range Management

Department/Number: HLRM 140 Credits: 2

Prerequisites: None

Location: Northwest Campus and distance delivered via Blackboard and E-Live

Meeting Dates/Time: Fall 2007, 2 hours/week for the first 8 weeks of the semester with the forth week consisting of a three-day intensive in Nome instead of the regular 2 hour meeting time.

INSTRUCTOR INFORMATION:

HLRM FACULTY
UAF Northwest Campus
Pouch 400
Nome, AK 99762

LOCAL CONTACT INFO:
UAF Northwest Campus
Pouch 400
Nome, AK 99762
907-443-2201
800-478-2202

COURSE READINGS/MATERIALS:

Course Textbook:

Author: Publisher:

Supplementary Readings (Indicate whether required or recommended):

Students will be provided with a booklet of reading materials prior to the start of the course.
Any Supplies Required: Access to a computer that supports the UAF Blackboard and E-Live course delivery system. For the 3-day intensive portion of the course, students should bring appropriate clothing, footwear, and a daypack for performing work outdoors in possible inclement weather. A detailed list will be mailed to students a few months prior to the course.

**COURSE DESCRIPTION:**

Policies and terminology on range and range management, specific to Alaska and the Arctic. Review current vegetation inventory techniques used by federal and state agencies. Identify and sample Alaska forage plants. Examine range production systems in Alaska for a variety of species; domesticated and wild. Development of a high latitude range management plan.

**COURSE GOALS:**

General Description of Goals: The overall goal of this course is for students to gain a broad understanding and perspective on range management science, issues, ecology, and policies for high latitude systems. Students will also develop field skills in forage plant identification, collection, biomass analysis, stocking density calculations, range evaluation and a range management plan creation.

Student Learning Outcomes/Objectives (Provide Examples):

Knowledge and comprehension outcomes/objectives:
- Define basic range management terminology
- Describe ruminant taxonomy and evolution
- Describe tundra and arctic ecosystems
- Recognize possible changes in high latitude ecosystems due to climate change and contaminants
- Locate physical characteristics of high latitude range on the Seward Peninsula
- Identify and classify Alaskan forage plants by family and species
- Explain forage plant digestibility
- Explain the similarities and differences between various range production systems in Alaska (caribou, moose, bison, reindeer)

Analysis and application outcomes/objectives:
- Compare and contract wild and domesticated herbivores
• Interpret possible responses of high latitude ecosystems to change (i.e. climate, contaminants, grazing, other range manipulations)
• Examine plant growth forms and components on high latitude ranges
• Calculate biomass of preferred lichen species and stocking densities for specified range area
• Differentiate between preferred and non-preferred forage species for herbivory at high latitudes
• Use plant sampling frames and a drying oven for collected samples
• Choose various rangeland inventory and monitoring schemes based on presented case studies
• Compare and contrast various management tools for range management (stocking rates, state and transition models, similarity indexes)

Synthesis and evaluation outcomes/objectives:
• Plan and assemble a range management plan specific to high latitudes
• Collect preferred forage lichen species and assess biomass
• Compare grazing methods and range manipulations for optimal production
• Assess range condition in field
• Appraise range management policy in Alaska and formulate changes or new ideas
• Evaluate various range production systems in Alaska to predict outcomes or suggest changes or manage for selected goals.

INSTRUCTIONAL METHODS:

This course will be taught via distance delivery using Blackboard and E-Live during seven 2-hour class meetings. During the 3-day intensive period, classroom face-to-face lecture, outdoor field lecture, demonstrations, and data collection will be used. In addition to the regular course instructors, guest presenters will be scheduled throughout the intensive portion of the course to enhance course topics and broaden student perspective.

SYLLABUS / COURSE CALENDAR:

Class 1: Introduction to Range Management
  o Course introductions, syllabus review
  o Range management terminology
Class 2: Range Ecology at High Latitudes

- The tundra ecosystem
- The arctic ecosystem
- Contaminants in the Artic
- Possible effects of climate change
- QUIZ

Class 3: Alaska Forage Plants

- Definition of plant growth forms and components
- Characteristics of forage species
- Forage plant digestibility (NDF, ADF, Lignin)
- Plant families of the Seward Peninsula

Three-day Intensive in Nome (with course instructors and guest presenters):

Day 1: Evening, 6:00 PM – 9:00 PM
- Rangeland inventory and monitoring
- Traditional knowledge in range management

Day 2: All day, 9:00 AM – 12:00 PM, 1:00 PM – 5:00 PM
- Identification of Alaskan forage plants and lichens (herbarium and field)
- Lichen identification and characteristics (herbarium and field)
- Identification of high latitude rangeland and ecological sites of the Seward Peninsula (classroom and field)
- Set up transects and collect lichen samples on the Seward Peninsula for biomass analysis
- Sort preferred from non-preferred lichen species in classroom
- Label lichen samples and place in drying oven

Day 3: Morning, 9:00 AM – 12:00 PM
- Lab practical EXAM on Alaskan forage plants
- Biomass calculations & analysis
- Calculate stocking densities for sample range area

- Ruminants – evolution, taxonomy, domestication, grazing
- Conservation issues for wild and domestic herbivores
Class 4: Range Production Systems in Alaska

- The reindeer system (nutrition, behavior, ecology)
- The caribou system (nutrition, behavior, ecology)

Class 5: Range Production Systems in Alaska

- The bison system (nutrition, behavior, ecology)
- The moose system (nutrition, behavior, ecology)
- QUIZ

Class 6: Management of Alaskan Range Lands

- Selection of grazing methods, overgrazing
- Range manipulation and animal distribution
- Managing grazing lands; policies and land in Alaska
- Management tools – stocking rates, similarity indexes, state and transition models, telemetry, internet mapping

Class 7: A High Latitude Range Management Plan

- What is a range management plan?
- Students will work together as a class to develop a high latitude range management plan
- Discussion of the high latitude range management plan
- Course evaluations

COURSE POLICIES:

Students are expected to attend and participate in all class meetings and field trips. Students are expected to arrive on time. Class participation is encouraged and important for learning the techniques and methods covered throughout the course.

Students staying in the NACTEC dormitory are expected to follow all dorm rules and regulations. Failure to comply will be reflected in your final evaluation.
EVALUATION:

The grading system for the course will be: 90-100% = A, 80-89% = B, 70-79% = C, 60-69% = D, below 60% = F. The student’s grade will be based on completing assigned readings, 2 in-class quizzes (20% each), a lab-style practical exam (20%), and a range management plan (20%). In addition to the coursework, attendance (10%) and class participation (10%) will be used to determine the student’s final grade. Unexcused absences, excessive tardiness, and failure to complete course materials and participate may result in a failing grade.

SUPPORT SERVICES:

Barbara Oleson, Student Services Program Manager, 443-8402 or Bob Metcalf, Records & Registration, 443-8403.

DISABILITIES SERVICES:

The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. State that you will work with the Office of Disabilities Services (203 WHIT-7043) to provide reasonable accommodation to students with disabilities:

DISABILITIES SERVICES TEXT FOR DISTANCE FACULTY SYLLABII
(Approved by Mary Matthews, UAF Disability Services, June 16, 2004)

UAF DISABILITY SERVICES FOR DISTANCE STUDENTS

UAF has a Disability Services office that operates in conjunction with the College of Rural Alaska's (CRA) campuses and UAF’s Center for Distance Education (CDE). Disability Services, a part of UAF’s Center for Health and Counseling, provides academic accommodations to enrolled students who are identified as being eligible for these services.

If you believe you are eligible, please visit http://www.uaf.edu/cht/disability.html on the web or contact a student affairs staff person at your nearest local campus. You can also contact Disability Services on the Fairbanks Campus at (907) 474-7043, fydso@uaf.edu.