

**COURSE INFORMATION:**

Title: NRM Range Management (Directed Study)

Department/Number: NRM 312 Credits: 3

Prerequisites: Permission of Instructor

Location: Fairbanks Campus

Meeting Dates/Time: TBA 2 hour sessions/week, lecture and/or lab or fieldwork. 6 hours hours/week independent reading and study.

**INSTRUCTOR INFORMATION:**

SNRE FACULTY  
Greg Finstad

LOCAL CONTACT INFO:  
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RM 315 O'Neill  
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interactions at a particular site. Students will examine the dynamics of grazing, emphasizing the physical, chemical and biological processes influencing grazing systems and the grazing process. Review current foraging ecology and grazing management literature.

**COURSE GOALS:**

General Description of Goals: The overall goal of this course is for students to gain a broad understanding and perspective on the ecology and management of high latitude grazing systems. Students will also develop skills in forage plant identification,

## **INSTRUCTIONAL METHODS:**

The class will meet 3 times/month for lectures or lab or field exercises. There will be two scheduled exams and a final exam. Students will be given a weekly reading assignment and homework. In addition to the regular course instructor, guest presenters may be scheduled throughout the course to enhance course topics and broaden student perspective.

## **SYLLABUS / COURSE CALENDAR:**

### **Class 1: Introduction to range ecology and management**

Course introductions, syllabus review  
Range ecology terminology  
Introduction to Optimal Foraging Theory  
Grazing as an ecosystem component  
Biotic diversity  
Definition of plant growth forms and components  
Functional roles of different plant groups

- Graminoids
- Forbs
- Shrubs
- Trees
- Lichen

Below ground productivity, diversity  
Plants and herbivory

### **Fieldwork**

Set up transects and collect plant samples on AFES pastures for standing crop and biomass analysis  
ID and sort preferred from non-preferred plant species  
Place in drying oven to estimate forage DM production of pasture; reindeer range

### **Class 2: Alaska Forage Plants**

Characteristics of forage species  
Forage growth cycle  
Nutrient levels in forages (NDF, ADF, Lignin)  
Identification of Alaskan forage plants

### **Fieldwork**

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 tundra grazing system



Stocking variables  
Utilization  
Initial stocking rates  
Dynamics of grazing capacity  
Quiz 2

**Class 11: Grazing animal intake, equivalence and intensity**

Dry matter intake  
Forage allocation  
Animal equivalence and the animal unit month  
Overgrazing and overstocking  
Grazing intensity effects on vegetation, site, animals and economics

**Class 12: Grazing management methods**

Grazing management techniques

**Class 13: Grazing management systems**

Rotational grazing  
Deferred grazing  
Rest grazing  
Continuous grazing

**COURSE POLICIES:**

Students are expected to attend and participate in all class meetings. Students are expected to complete assigned homework critically read the weekly hand-outs. Class participation and discussion is encouraged and important for learning the concepts covered throughout the course.

**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 critical reading and discussing assigned readings (20%), homework assignments (20%) 2 in-class quizzes (10% each), 2 in-class exams (20% each). Unexcused absences, excessive tardiness, and failure to complete course materials and low participation may result in a failing grade.

**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:

