Rangeland Management (NRSM 360)

Lectures: Mondays and Wednesdays 9:00-9:50 in Stone Hall 304
Labs: Monday or Wednesday from 2:00-4:50 In Forestry 106 or outside in field setting

Instructor information:

Instructor: Dr. Akasha Faist
Office: Temp: Forestry 103C (will notify when changes)
Email: akasha.faist@umontana.edu, Phone: TBD
Office hours: Thursday's from 9:00am-11:00am or by appointment

Teaching assistant (TA): Rebekah Brassfield rebekah.brassfield@umontana.edu

Course description:

This course is an introduction to rangeland ecosystems and range management and science. Range management is an integrative management science involving plant physiology, animal science, ecology, soil science, hydrology, economics, and other disciplines. Students learn about rangeland ecosystems, historical and policy aspects, different rangeland types and ecosystem function, interaction of plants with grazing response of plants and communities, issues and concerns regarding vegetation and ungulate management, and introduction to livestock and animal nutrition principles.

Lectures: Lecture and course topics are structured around three main themes: Rangeland foundations, rangeland management approaches, and multiple uses and considerations. The lectures will generally follow the textbook and alternate readings provided, as well as outside information used to augment the topic area. All assigned reading should be read before the lectures and will be provided on Moodle a minimum of one week prior to when we will cover the topic in class. Material covered in the lecture and required outside readings can be included in quizzes and exams.

Laboratory: There will be a lab on Monday or Wednesday afternoon (dependent on what you are registered for) from 2:00 – 4:50pm each day. Labs will meet every week unless otherwise noted. Most labs are scheduled to take place outdoors (weather permitting) during the first half of the semester. Field labs will be held outside, and weather can be variable, thus the student is responsible for proper attire in these changing conditions. On occasion, brief lecture material may be presented in the lab to ensure the labs have the necessary information to effectively complete the different activities. During outdoor labs we will work to return to campus by 4:50. However, if situations arise outside of our control (e.g., weather or road construction) we may return later than this 4:50 time period. All students are expected to attend field labs.

Learning Outcomes:

To serve as a background course covering the broad range of subjects found within the Rangeland Management framework, the main learning outcome of this course is to provide students with a foundational knowledge of what Rangelands are, general rangeland management principles and practices, and what rangeland managers are tasked with in their positions. Upon completion of this course students will have the ability to:

1. Describe rangelands in general, including their products and values including multiple use principles.
2. Understand the different types of rangelands globally as well as more locally here in Montana.
3. Connect the broad ecological components found within rangelands to enhance effective management.
4. Develop and communicate livestock specific management actions and their potential outcomes to rangeland management.
5. Develop and communicate common management practices in place on rangelands and their potential outcomes on rangeland management.
6. Determine how social and economic components influence rangeland management efforts broadly.

Textbooks and required reading:

Some of the readings will come from (Holecheck et al. 2011) and purchasing the book is entirely optional. Chapters from textbook and outside readings across the topic areas covered will be uploaded to Moodle at least one week prior to the date that topic will be covered in class. You are expected to have read the assigned readings before the class period for which they were assigned.

- Textbook: Range Management: Principles and Practices (6th ed.). 2011. by J.L. Holecheck, R.D. Pieper, and C.H. Herbel. Prentice Hall publishing.
- Additional readings will involve scientific peer reviewed papers, reports, and other current literature and will be uploaded to Moodle prior to the class topic it is associated with.

Required assignments and assessments:

The lab and lectures will be combined to provide one total grade for the course (Table 1).

Exams and Quizzes: There will be three exams at 100 points each throughout the semester. The first two exams will only cover material associated with the material within that module. For instance, Exam 1 will cover material from the start of class through to Exam 1. Exam 2 will only include material covered after Exam 1. Exam 3 is the final (administered during our **final exam time of 8:00-10:00am Thursday, December 15th**) and will be cumulative. Four quizzes, at 25 points each, will be given in the class lecture portion of the course. Quizzes will cover the most recent lecture materials, or material in assigned readings, prior to the previous quiz or exam. All exams and quizzes will be any combination of multiple choice, fill in the blank, true or false and short answers.

Assignments and Lab reports: Assignments and lab reports will include both lab and lecture topics. Assignments and lab reports will have specific instructions and a rubric provided; however, all assignments and lab reports must be typed (unless otherwise indicated), well-organized, well-written, and neat. Unacceptable work will be returned ungraded.

Reading summaries: Reading summaries provide the opportunity to share what you have learned in the outside readings. Instructions and a rubric will be provided for summaries. Summaries will be due to Moodle prior the start of class in which that topic will be discussed.

In-Class Activities and Participation: Attendance and participation are essential to success in this course. There will be in-class activities that reinforce the topics being covered. In-class activities must be completed in class and cannot be made up or completed at another time unless communicated with the instructor. *Please do note, one in-class activity is allowed to be dropped*.

Table 1: Breakdown of the different assessments and their associated points and percentage of the total grade.

Category	Total points	Percent of grade (rounded)
Exams	300	50%
Quizzes	100	17%
Assignments and lab reports	100	17%
Reading summaries	40	7%
In class assignments and participation	60	10%

Course guidelines and policies:

Attendance

Attendance is mandatory, and essential, to comprehend course material a portion of the grade is dedicated to participation. Students missing more than 4 lecture periods without prior consent from the instructor will receive a 10 pt deduction for each additional absence that is not approved by the instructor. Attendance will be taken in the first 10 minutes of classes, if greater than 15 minutes late to sign in after the start of class, this will be considered an absence unless prior arrangements were made. Lab attendance is also essential and if you are to miss a lab, this must be communicated prior to the start of lab and approved by the instructor. All University policies associated with class attendance (e.g., current COVID quarantine/isolation policies) will be respected and proper procedures followed by the student and instructor.

Grading policy

This is a points-based class with a total of 600 points possible (Table 2). Grades are allocated according to these total points. Should the point totals change in the semester, the associated grades will be adjusted and communicated to students.

Table 2. Breakdown of how points are associated with a letter grade and the potential notations outside of the standard letter grade that will be entered into CyberBear at the completion of the course.

Grade	Associated points
A	558-600+
A-	540-557
B+	522-539
B	498-521
B-	480-497
C+	462-479
C	438-461
C-	420-437
D+	402-419
D	378-401
D-	360-377
F	0-359
I - Incomplete	
N – To be completed in following semesters	
NF – No record of academic performance	
W – Withdrawal or drop after 15th instructional day.	
WP – drop after 45th instructional day with a pass	
WF – drop after 45th instructional day with fail	
AUD – auditor registration	

Assignment expectations

Late Assignment Policy: In the case that you are not able to complete assignments on time, you have the option to turn it in late under the following conditions: **late assignments must be submitted within one week (7 days) of the original due date**; and 10% (for 1 to 3 days late) and 25% for (4 to 7 days late) will be automatically deducted from the points possible for the late assignment. Exceptions to this policy are at the discretion of the instructor and may be made under certain circumstances but student is responsible for communicating with the instructor *before* the assignment is late. The requirement for prior arrangements may be waived by the instructor in response to tragic events outside the control of the student.

Multiple Submissions: Multiple submissions or using work that has been submitted for credit in another course for this course, is highly discouraged. Any multiple submissions must be discussed with the instructor prior to assignment due date. If an assignment is submitted that has received credit in another course, without discussing this with the instructor, the assignment will automatically be given a zero.

University guidelines, policies, and resources:

Student Conduct Code

All students need to be familiar with the Student Conduct Code. The Code is available for review on-line at the Student Conduct Code website.

Course add and withdrawal dates

The last day for students to add classes via CyberBear without the consent of the instructor is September 7th, 2022. From September 8th through September 19th adds must be approved by instructor via electronic override in CyberBear. The academic calendar in addition to holidays and other academic calendar events states the semester withdrawal deadlines and information to contact with questions. September 19th, 2022 is the last day to withdraw from a class with refund. December 9th, 2022 is the last day to withdraw from the semester.

Disability modifications

The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students. If you think you may have a disability adversely affecting your academic performance, and you have not already registered with Disability Services, please contact Disability Services in Lommasson Center 154 or call 406.243.2243. I will work with you and Disability Services to provide an appropriate modification.

Cultural Leave

Cultural or ceremonial leave allows excused absences for cultural, religious, and ceremonial purposes to meet the student's customs and traditions or to participate in related activities. To receive an authorized absence for a cultural, religious, or ceremonial event the student or their advisor (proxy) must submit a formal written request to the instructor. This must include a brief description (with inclusive dates) of the cultural event or ceremony and the importance of the student's attendance or participation. Authorization for the absence is subject to approval by the instructor. Appeals may be made to the Chair, Dean or Provost. The excused absence or leave may not exceed five academic calendar days (not including weekends or holidays). Students remain responsible for completion or make-up of assignments as defined in the syllabus, at the discretion of the instructor.

ElevateU Career readiness

The University is committed to the career success of our students and encourages you to participate in ElevateU -UM's signature career readiness program- to ensure that you graduate career-ready, with the education, skills, and tools needed to launch, carry-on, and pivot your post-graduate career. Participation in ElevateU is free and can be started at any time, no matter where you are in your academic career or career journey. Get started by creating a profile on Handshake to search for jobs and internships or by scheduling an appointment with an Experiential Learning and Career Success (ELCS) career coach or advisor.

Land Acknowledgement

"The university of Montana acknowledges that we are in the aboriginal territories of the Salish and Kalispel people. Today, we honor the path they have always shown us in caring for this place for generations to come."

Course calendar and schedule:

The course specific lecture (Table 3) and lab (Table 4) calendar and schedule will be reviewed in class and listed on Moodle along with the Syllabus. Should any changes to this schedule be made they will be updated in Moodle and appropriately communicated in the lecture and/or lab.

Table 3..Lecture schedule with date of class, the lecture topic covered, and associated assessment or assignment.

Date(s)	Lecture Topic	Quiz, Exam, and Assessment Schedule
August 29th	Introductions/overview	
August 31st	Types of Rangelands	

Date(s)	Lecture Topic	Quiz, Exam, and Assessment Schedule
September 5th	Labor day Holiday – No class	
September 7th	Rangeland Management History	
September 12th	Plants	Summary of reading (#1) due before class
September 14th	Soil	
September 19th	Ecological states/sites	Summary of reading (#2) due before class and during class in-class discussion
September 21st	Quiz 1	Quiz 1
September 26th	Wildlife	
September 28th	Abiotic	Assignment #1 due
October 3rd	Ecology	
October 5th	Exam 1	Exam 1
October 10th	Inventory and Monitoring	
October 12th	Stocking rates	Summary reading (#3) Stocking Rates
October 17th	Grazing methods	
October 19th	Quiz 2	Quiz 2
October 24th	Animal nutrition	Summary reading (#4) Animal Nutrition.
October 26th	Invasive species	
October 31st	Fire	
November 2nd	Quiz 3	Quiz 3
November 7th	IPM	
November 9th	Exam 2	Exam 2
November 14th	Overview and revisit day!	Lab report due (Monday lab)
November 16th	Economic	Lab report due (Wednesday lab)
November 21st	Social	
November 23rd	Thanksgiving holiday – No class	
November 28th	Recreation	
November 30th	Quiz 4	Quiz 4
December 5th	Rangeland management future	Lubrecht and Bandy report/project due (Monday lab)
December 7th	Rangeland management future	Lubrecht and Bandy report/project due (Wednesday lab)
December 15th	Final Exam 8:00-10:00am	Exam 3

Table 4. Lab schedule with dates, the location where the lab will be held (weather permitting) and the lab specific assignments.

Date(s)	Lab location	Lab specific assignment due (duplicated from lecture schedule)
August 29th- 31st	Introductions/overview – In classroom	
September 5th-7th	Labor day Holiday – No Lab	
September 12th-14th	In field – Bandy Ranch	
September 19th-21st	Lab time allocated to work on Assignment #1 independently – No Lab	
September 26th- 28th	In field -- Lubrecht	
October 3rd – 5th	In field -- Lubrecht	
October 10th-12th	In field – Lubrecht	
October 17th -19th	In field – Bandy Ranch	
October 24th – 26th	In field – Bandy Ranch	
October 31st – Nov 2nd	In field – MPG Ranch	
November 7th – 9th	In classroom – building on in-field concepts.	
November 14th – 16th	In classroom – data summary/analysis/figures	Lab report due from previous weeks lab
November 21st-23rd	Thanksgiving holiday – No lab	
November 28th-30th	In classroom – summary/analysis/figures	
December 5th – 7th	In classroom – Final project	Lubrecht/Bandy report due (from lab field and classroom work)
December 15th	Final Exam 8:00-10:00am	Exam 3