COURSE SYLLABUS (Tentative September 15, 2022)

Rangeland Ecosystem Assessment and Monitoring (REWM 4330)

Fall Semester 2022

- M 11:00–12:50 PM – College of Business 108
- M (field lab) – 1:10–5:00 PM – Field Trip or Agriculture 4040
- W (computer lab) – 11:00 AM–12:50 PM – College of Business 108

REWM 4330 in Fall 2022 is an on-campus class with Monday field trips. REWM 4330 will be taught in Fall 2022 in person and is NOT an online course. I will not be making Zoom recordings.

Instructor Information:

Instructor: Dr. Jeff Beck
Phone: (307) 766-6683
Office: AG Room 2004
E-mail: jlbeck@uwyo.edu
Office Hours (in my office or via pre-arranged Zoom meeting):
Tuesday 10:00 AM–2:00 PM
Wednesday 1:00–2:30 PM

Graduate Teaching Assistant: Courtney Buchanan
Office: AG Room 3
E-mail: cbuchan3@uwyo.edu
Office Hours
Thursday, 1:00–3:00 PM

Prerequisites:

REWM 2400 and STAT 2050 or 2070. Concurrent prerequisite enrollment with permission.

Course Description:

Rangeland Ecosystem Assessment and Monitoring is a required course for undergraduate students majoring or minoring in Rangeland Ecology and Watershed Management and is very applicable for students majoring in other related disciplines. The official course description is "Assessment, monitoring, and analysis of rangeland ecosystems and processes. Students integrate sampling design, measurements of vegetation attributes, indicators of rangeland health, ecological site information, riparian and wildlife habitat values, utilization, and statistical applications to evaluate rangeland resource integrity and sustainable use. Students collect, analyze, and report data using current technologies. Consequently, there will be an emphasis on quantitative and theoretical concepts forming the basis of rangeland monitoring and assessment including appropriate measurements, analyses, applications, and reporting results. The course is fundamentally designed as a field course where we will collect vegetation and other samples from the field and then summarize, analyze, and report our findings. We will have indoor labs as the semester progresses or weather become unsuitable for field sampling.

Statement About Information in the Syllabus:

Information contained in the course syllabus, other than grade and absence policies, may be subject to change with reasonable advance notice, as deemed appropriate by Dr. Beck. Substantive changes made to the syllabus by Dr. Beck during the semester shall be posted on an updated syllabus on the course website, emailed to students

in REWM 4330, and shared in class to students with reasonable notice.

Disability Statement:

If you have a physical, learning, sensory or psychological disability and require accommodations, please let me know as soon as possible. You will need to register with, and possibly provide documentation of your disability to Disability Support Services (DSS), room 128 Knight Hall. You may also contact DSS at (307) 766-3073 or udss@uwyo.edu. Visit their website for more information: www.uwyo.edu/udss.

Diversity Statement:

The University of Wyoming values an educational environment that is diverse, equitable, and inclusive. The diversity that students and faculty bring to class, including age, country of origin, culture, disability, economic class, ethnicity, gender identity, immigration status, linguistic, political affiliation, race, religion, sexual orientation, veteran status, worldview, and other social and cultural diversity is valued, respected, and considered a resource for learning.

Writing Statement:

It is vital to your academic and career development that you be able to effectively convey your knowledge through writing. To reinforce and refine your writing skills, all required REWM courses will include some writing assignments that will assess proper composition (e.g., grammar, punctuation) as part of the grade. You are encouraged to consider accessing numerous resources on campus that are dedicated to providing assistance for enhancing student writing skills (e.g., the Ellbogen Writing Center (766-5250), the College of Agriculture and Natural Resources academic success tutors (766-3046), and the Student Educational Opportunity office (766-6189)).

Objectives/Outcomes/Standards:

Course Objectives

1. To gain an understanding of the central concepts and theory used in rangeland ecosystem assessment and monitoring
2. To gain proficiency in the use of field sampling equipment and techniques used to measure rangeland vegetation
3. To become competent in statistical, graphical, and reporting approaches to describing and summarizing rangeland vegetation measurements
4. To encourage further learning about rangeland ecosystem assessment and monitoring

Classroom Behavior Policies

1. Students are expected to: be on time, participate in field and in-class labs, read literature before class, and participate in discussions
2. Academic honesty and integrity are University Policies. Failure to maintain these standards may result in a failing grade and/or referral to the Dean of Students.
3. Derogatory language or behavior based on race, gender, religion, political affiliation, sexual orientation, or physical or mental abilities is not appropriate for class
4. Use of cell phones and other mobile devices is not permitted during lectures or computer labs and should be minimized during field labs (e.g., minimal text messaging by passengers in UW vehicles during transport)
5. For additional information on appropriate behavior in University of Wyoming classrooms and field labs, refer to the University of Wyoming "Student Code of Conduct" http://www.uwyo.edu/dos/_files/docs/studentcodeofconduct19.pdf.
6. Disrespectful or disruptive behavior may result in your removal from class

Student Responsibilities

1. Participate fully in all class discussions, field labs, and in-class labs
2. Read assigned material before class
3. Turn in assignments on the respective due dates

Attendance/Participation Policy:

1. Absences result in poor performance on assignments and exams, so please attend each class
2. University sponsored absences are cleared through the Office of Student Life
3. Other absences must be cleared through me

Academic Honesty:

The University of Wyoming is built upon a strong foundation of integrity, respect and trust. All members of the university community have a responsibility to be honest and the right to expect honesty from others. Any form of academic dishonesty is unacceptable to our community and will not be tolerated [from the UW General Bulletin]. Teachers and students should report suspected violations of standards of academic honesty to the instructor, department head, or dean. Please consult UW Regulation 2-114 https://www.uwyo.edu/regs-policies/_files/docs/section-2-regulations-july-2018/uw_reg_2-114_format_effective_7-1-18.pdf for additional information on academic honesty.

COVID-19 Policies – during this pandemic, you must abide by all UW policies and public health rules put forward by the City of Laramie (or by Natrona County if at UW-Casper), the University of Wyoming and the State of Wyoming to promote the health and well-being of fellow students and your own personal self-care. The current policy is provided for review at: https://www.uwyo.edu/alerts/campus-return/index.html

As with other disruptive behaviors, we have the right to dismiss you from the classroom (Zoom and physical), or other class activities if you fail to abide by these COVID-19 policies. These behaviors will be referred to the Dean of Students Office using the UWYO Cares Reporting Form for Student Code of Conduct processes (https://cm.maxient.com/reportingform.php?UnivofWyoming&layout_id=5).

Syllabus Changes: I will alert you to any possible course format changes in response to UW decisions about community safety during the semester.

HyFlex, Zoom, and WyoCourses expectations:
As with all UW coursework, this course will be educational and useful to you. I will respond to questions, concerns, and feedback in a timely manner.

Your responsibilities:

• Give and receive feedback from me and your classmates respectfully and constructively in all interactions. This includes in Zoom chats, on WyoCourses boards, and within physical classroom spaces.

• Actively engage in civil discourse in a respectful manner. Use professional language in all course related forums.

• Communicate professionally. Whenever you send class-related email or messages, please include a clear, specific subject line and use the body of the email or message to explain the purpose for the email and any attached materials. Conduct yourself professionally.

• Meet assignment deadlines. We expect that you're interacting with course material multiple times during the week.

• Ask for help when you need it. For academic assistance for this course please contact me for available resources. For Dean of Students assistance please see: https://www.uwyo.edu/dos/student-resources/covid-19-student-resources.html

• Please let us know if you notice another student who needs help in our (anonymous) WyoCares referral option (https://www.uwyo.edu/dos/students-concern/index.html).

Information Technology (IT): If you have any IT related challenges, please contact the UWIT Service Center: https://uwyo.teamdynamix.com/TDClient/1940/Portal/Requests/ServiceDet?ID=8890

Student Attendance Policy

UW will adhere to UW Regulation 2-108 Student attendance Policy. However, during the COVID-19 pandemic, instructors are encouraged to add additional information on the attendance policy specific for their course and modality of delivery.

Coronavirus Pandemic Addendum to Attendance Policy: During the fall of 2020 and for the duration of the coronavirus pandemic, the attendance policy applies as noted below:

- Self-Quarantine and Isolation: Any student notified that they have tested positive for covid-19 or that they have been exposed to someone who has tested positive for covid-19 may need to isolate for up to two weeks at a time (https://www.uwyo.edu/alerts/campus-return/index.html) Students will not be penalized for having to self-quarantine for exposure to an known positive. Students who test positive will be told to isolate and should continue to complete course work online for the duration of their isolation as they are able.

- Illness: Under no circumstances are students to attend in-person classes if they are experiencing any symptoms of covid-19. Illnesses are covered under the Authorized Absence program managed within the Dean of Students Office (https://www.uwyo.edu/dos)

Note: All campus community members are requested to use the COVID Pass as tool to track their personal health symptoms. If a student enters their daily temperature and symptoms and receives a "fail", they should notify their faculty they will need to participate virtually for that day.

Hyflex Absences

An official student absence for the hyflex version of this course is when a student meets the following criteria:

- The student misses a scheduled in-class drawing session.
- The student or a dedicated representative of the student fails to communicate the reason for their absence within the week of the absence.
- The student does not engage with the week's course material and/or does not turn in the week's assignment on time.

Online Absences

In the event that the course moves online at any point in the semester, an official student absence for the online version of this course is when a student meets the following criteria:

- The student does not engage with the week's course material and/or does not turn in the week's assignment on time.

- The student or a dedicated representative of the student fails to communicate the reason for not engaging with the course material and/or not turning in the week's assignment on time within the week of the absence.

Texts (*PDFs posted on WyoCourses website*) and Readings:

Required Textbooks (Note: I will provide required sections from these 4 manuals in separate assignments). You will be responsible to read this material and will be tested accordingly.

Coulloudon, B., K. Eshelman, J. Gianola, N. Habich, L. Hughes, C. Johnson, M. Pellant, P. Podborny, A. Rasmussen, B. Robles, P. Shaver, J. Spehar, J. Willoughby. 1999 (revised). Utilization studies and residual measurements. Interagency Technical Reference 1734-3. USDI Bureau of Land Management, National Applied Resource Sciences Center, Denver, Colorado. BLM/RS/ST-96/004+1730.

Coulloudon, B., K. Eshelman, J. Gianola, N. Habich, L. Hughes, C. Johnson, M. Pellant, P. Podborny, A. Rasmussen, B. Robles, P. Shaver, J. Spehar, J. Willoughby. 1999 (revised). Sampling vegetation attributes. Interagency Technical Reference 1734-4, USDI Bureau of Land Management, National Applied Resource Sciences Center, Denver, Colorado. BLM/RS/ST-96/002+1730.

Herrick, J. E., J. W. Van Zee, K. M. Havstad, L. M. Burkett and W. G. Whitford. 2009. Monitoring manual for grassland, shrubland, and savanna ecosystems. Volume I: Quick Start. USDA - ARS Jornada Experimental Range, Las Cruces, New Mexico.

Herrick, J. E., J. W. Van Zee, K. M. Havstad, L. M. Burkett and W. G. Whitford. 2009. Monitoring manual for grassland, shrubland, and savanna ecosystems. Volume II: Design, supplementary methods and interpretation. USDA - ARS Jornada Experimental Range, Las Cruces, New Mexico.

The Jornada Experimental Range – Monitoring and Assessment Website
http://jornada.nmsu.edu/monit-assess

Additional Readings

To enhance your educational experience, I will provide relevant, copyrighted readings on the REWM 4330 course website. You will be responsible to read these articles and will be tested accordingly.

Course Requirements/Assignments:

Grading Standards

Grades will be assigned on the basis of percentage of total points earned. I am assigning grades based on a straight-letter grading system.

A = >90%
B = 80–89%
C = 70–79%
D = 60–69%
F = <59 %

Late Assignment Policy

Reports and assignments are due at the beginning of class on assigned due dates. Reports and assignments will lose a half letter grade if submitted later that day, and will not be accepted more than 1 day past the due date. I will make accommodations only for valid emergencies.

Assignments (Note: I may provide some extra points via in-class assignments)

Assignment	Number	Point Value	Total Points
Data provided by groups*	7	5	35
Problem sets/worksheets	7	10 (4), 20 (3)	100
15-pt short assignments	2	15	30
30-pt short assignments	6	30	180
50-pt short assignments	2	50	100
Excel lab reports (memos)	2	75	150
Quizzes	7	10	70
First exam	1	100	100
Take-home exam (w/first exam)	1	35	35
Second exam	1	100	100
Third exam	1	100	100
Total			1,000

*I will deduct 10 points per lab assignment for those groups that do not turn in their data on time. Need to be present and participate in field labs to earn these points.

Course Outline:

Tentative Schedule

Week*	General Topic	Specific Topic	Assignment**
1–Aug 22, 24		*NO CLASS – Pronghorn Workshop*	*NO CLASS*
2– Aug 29*, 31	ESDs	Ecological Site Descriptions and Rangeland Health Basics of Sampling and Stats	ESDs/Rng Health (30)
3–Sep 5 (Labor Day – No Class), 7 (only)	Sampling/Stats Excel basics	Sampling and Basic Statistics Lab on Sep 7	*Sampling PS* (20) *Excel basics PS* (20)
4–Sep 12*, 14	Cover	Herbaceous cover	*Cover PS* (10) Cover Memo (75) *Quiz 1* (10)
5–Sep 19*, 21	Riparian assessment; SamplePoint Lab	Riparian Assessment; Sample Point Lab	Riparian lab (15); SamplePoint (30); *Quiz 2* (10)
6–Sep 26, 28	Herbaceous Production	Herbaceous productivity; Grass samples	*Herb production PS* (20); Herb production memo (50);
7–Oct *3, 5	Fuel estimation	Fuel Modeling *Take Home Questions for Exam 1*	Fuel model (30); *Quiz 3* (10) Take Home Questions for Exam 1 (35)
8–Oct 10, 12	Exam 1 (Oct 10)	Exam 1 – Wednesday Lab only if Necessary (mid-term grades due Oct 21)	Exam 1 (100 in class and 35 take home)
9–Oct 17, 19	Utilization	Livestock utilization	*Utilization PS* (10) Utilization Memo (75) *Quiz 4* (10)
10–Oct 24, 26	Wildlife habitat	Deer winter range Carrying Capacity & Frequency Lab (or Oct 25)	Wildlife habitat (50) *Quiz 5* (10)
11–Oct 31, Nov 2	Frequency	Grass Ht:Wt Curves; Frequency/ground cover	Grass Ht:Wt (15) *Freq. PS* (10) Frequency (30) *Quiz 6* (10)
12–Nov 7, 9	Exam 2 (Nov 7) Biodiversity	Exam 2 – Nov 7; Diversity and evenness indices	Exam 2 (100) *Biodiversity PS* (10) Biodiversity (30) *Quiz 7* (10)
13–Nov 14, 16	Resource Selection	Forage and habitat selection by animals	Res selection (30)
14–Nov 21, 23		*NO CLASS – Thanksgiving Break*	*NO CLASS*
15–Nov 28, 30	Quadrat shape/size	Quadrat Size and Shape and Table and Figure Interpretations; Exam Review; Rangeland Analysis Platform (RAP) introduction	
16–Dec 5, 7	Exam 3 (Dec 5)	Exam 2 – Dec 5	Exam 3 (100)
17– (Finals Weeks) Dec 12–16		Finals Weeks (NO Exam)	

Bolded Mondays are field trips

*Labs held on the USDA Medicine Bow-Routt National Forest.

**Assignment distributed this week; due dates will be assigned at this time.