

# RANGELAND ECOLOGY

NRM 5302:001

Fall 2016

**Instructor:** Dr. Rob Kinucan

Room 101A, Turner RAS Building

Phone: 837-8201

Office Hours: M-F, 10:00 – 12:00 & by arrangement

## **Course Objectives:**

Course objectives are to: 1) inculcate rangeland ecology principles within an historical context, 2) promote an appreciation of seminal literature in the development of the discipline, 3) nurture critical evaluation of philosophies in range ecology, and 4) enrich knowledge and appreciation of the theoretical underpinnings of applied rangeland management. As a result of taking this course, you should: 1) be able to describe structural and functional characteristics of rangeland ecosystems, 2) understand the origin and evolution of rangelands, 3) recognize the historical development of plant/range ecology, and 4) understand ecological succession models applied in natural resource management.

The Master's programs in Range and Wildlife Management address student learning objectives (SLOs), which state students should be able to: 1) apply statistical concepts and procedures to natural resource data, 2) evaluate literature and references to substantiate an applied research project, 3) examine, select, and utilize appropriate resources, materials, and data collection instruments to implement research projects, 4) justify and defend research questions and design, and 5) demonstrate knowledge of the fundamentals and advanced concepts of range and wildlife management. This course specifically addresses items 2, 4 and 5.

**Lecture:** T, 2:00 – 4:50 p.m., RAS 124

## **Grades:**

2 take home examinations @ 100 pts. ea.	200 points
Bibliography	100 points
Class participation	100 points
Total	400 points

Grade assignment: 90-100 = A; 80-89= B; 70-79 = C; 60-69 = D; < 60 = F

Book: Real, L. A. and J. H. Brown (eds.), Foundations of Ecology – Classic Papers with Commentaries. 1991. The University of Chicago Press.

This book is not required, but contains a number of the papers we will be reading and discussing throughout the semester. Furthermore, it contains a variety of classic papers in ecology, many of which will be mentioned or referred to throughout the semester. If you have a serious interest in ecology, particularly plant ecology, this is a great library reference to possess. The papers you are expected to read are available in our course Bb site.

***Tentative Assignment Schedule:***

Exam 1 – assigned October 7, 2016. Due October 14, 2016.

Exam 2 – assigned November 28, 2016. Due December 5, 2016.

Bibliography – assigned September 6, 2016. Due November 18, 2016. Follow the journal style and format of *Rangeland Ecology and Management*.

***Class Organization:***

1. As graduate students you are professionals, and I expect you to have proficiencies beyond those expected of undergraduates. You should be capable of utilizing library resources, locating and obtaining literature sources, executing written and spoken English at a post-graduate level, and organizing and expressing thoughts in a concise and logical manner. I expect assignment submissions to be typed in a style and format appropriate for graduate-level work. As learned academics and professionals, I assume you conduct yourselves in a respectful, professional, honest and ethical manner. Our relationship will be built on mutual trust and respect, and the expectation of professional integrity.
2. Learning and understanding complex ideas and concepts often requires more than simply skimming the material. Developing thorough understanding will take intense effort to master and may require reading the same literature multiple times and searching sources external to regular classroom activities.
3. I learn something new each day, and leading a graduate seminar is no different. Throughout the years I have gained a wealth of insight and knowledge from students, colleagues and producers – that’s what makes this job fun! I look forward to continuing the same experience in this class. Learning and teaching is a two-way street!
4. Web links, outside readings and assignments, and student grades are available in Blackboard (Bb) through the SRSU website. Bb is a great portal for information exchange, and I use it extensively. You will access and submit exams through Blackboard. I will use the plagiarism software SafeAssign in Bb for assignments. On some occasions, class assignments may be given in Bb in lieu of meeting in the classroom.
5. As an administrator my schedule requires frequent travel, and on occasion, attending meetings on short notice. I strive to be present for all class sessions, but occasions arise that require flexibility. I will keep you informed and make appropriate arrangements for class continuity if I am required to be gone. I keep regular office hours, and am available by phone and email throughout the work week.
6. Attendance and class participation are important factors for you to achieve the grade you desire. I appreciate the value of professional development and field research, and I will make accommodations for legitimate absences.
7. I place a premium on original work, therefore cheating or plagiarism is not acceptable.
8. It is Sul Ross State University policy to provide reasonable accommodations to students with disabilities. Accessibility Services Guidelines and Procedures can be reviewed on the SRSU website under student services.
9. In this seminar class format, each student will be expected to lead discussion on multiple occasions for a number of assigned readings. Leading these discussions, as well as participating in discussions lead by others, will constitute the majority of your class participation grade.

## ***Topical Outline***

- I. Course Overview (week 1)
- II. Definition and Scope (week 1)
  - A. Rangelands and Uses
  - B. Past and Present of Range Management
  - C. Rangelands as Ecosystems
- III. The Origin and Evolution of Rangelands (weeks 2, 3, 4, 5)
  - A. Biotic History
  - B. Climate and Paleoclimate
  - C. Pre-Pleistocene
  - D. Pleistocene
  - E. Holocene
  - F. Historical
- IV. Historical Development of the Discipline (weeks 5, 6, & 7)
- V. Community Dynamics and Controlling Factors (weeks 8, 9, 10, 11, 12, 13, 14)
  - A. Community Concepts
  - B. Succession
    - 1. Primary succession
    - 2. Secondary succession
    - 3. Successional models (historical development)
  - D. Management Implications
    - 1. Range sites
    - 2. Habitat types
    - 3. Ecological sites
  - E. Disturbance and Stability
- VI. Wrap-up (week 15)