Summer Ecosystem Experiences for Undergraduates (SEE-U)

Colorado: Land Use in the Rocky Mountains

Columbia University

Summer Session: June 11-27

3 credits

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SEE-U Colorado: An Immersive Educational Experience in the American West

The Summer Ecosystem Experiences for Undergraduates (SEE-U) provides undergraduate students of all majors with an understanding of the fundamentals of environmental sustainability. The SEE-U Colorado program, like its counterparts in New York City, Brazil, and Jordan, gives students the opportunity to learn through an immersive experience combining lectures, field trips, and exposure to local leaders.

Course Description

The American West is perhaps best known for the dramatic landscapes managed through a web of federal land management agencies. Indeed, western states have a land base that is at least 35% public, and competing interests vie for limited resources and navigate a complex bureaucracy. Less well understood are the dynamics that arise from the interactions among different land ownership categories: federal, state, and private. Working landscapes are essential pieces of the cultural heartbeat of the region. This course will focus on: 1) the history of western settlement, highlighting the ways in which early Westerners divided up the land base and allocated resources; 2) the agencies in charge of managing federal public land including the U.S. Forest Service, U.S. Bureau of Land Management, and U.S. Park Service; 3) state land, with a particular interest in the State Land Board; and 4) private land, including working ranches. We will explore the legal and regulatory framework that guides land-use decisions, and study enduring resource access conflicts. Pulling from both academic scholarship and the
gray literature in political science, environmental sciences, law, and organizational behavior, this course provides an interdisciplinary overview of governance challenges in the American West.

Lectures and classroom exercises
With an emphasis on the interplay among different kinds of land use, this course will introduce students to unique culture and environmental policy setting of the Rocky Mountain West. Students will be exposed to a range of concepts and will visit surrounding ecosystems as examples. Moreover, the course will explore current issues in sustainable development with a focus on terrestrial resource management in the region, including agricultural systems, recreation use, water use, timber extraction, energy development, wildlife conservation and climate change.

Field excursions and exercises
In this course, we have the opportunity to visit a broad spectrum of land use types including federally managed forest and grasslands, protected parks, state land board parcels, private ranches, and open spaces with conservation easements. Additionally, being on site will provide the class with access to local leaders who will accompany us on various field trips to offer their perspectives. Students will participate in many kinds of field activities including visiting federally designated Wilderness areas, visiting an oil and gas well on public lands, sitting in on a controversial land use hearing with the State Land Board, and meeting with rural ranchers. Additionally, field exercises serve as unique opportunities to generate discussion on historical, political, and cultural contexts.

Capstone Project
The centerpiece of the course, indeed the signature of the SEE-U program, is the individual research project or Capstone Project. Students will learn how to plan, execute, and present locally relevant research. Through this project, students will not only become experts on their chosen topic, but will learn firsthand about peer review (instructional staff will review written proposals as submissions for funding) and effective writing in the social sciences (proposals must be properly referenced and revised for conciseness, grammar, etc.). Project development begins with an introduction to the objective on the first day of class.

In the first week, students will select their topic in consultation with the instructor, TA, and fellow students. By the end of the week, they will submit a Capstone Project Proposal.

In the second week, students will conduct research and begin drafting the final paper. The instructor and/or the TA will review drafts and provide feedback.

In the third week, all students will deliver a presentation to the class. Feedback from that presentation will guide the next round of revisions on the paper, and the final version is due at the end of the final week.

Example Capstone Projects include:
- Managing wildfire in the Wildland-Urban Interface
- Energy development on State Land Board property
- Tribal perspectives on water law in the West
- Recreation conflicts on National Forests
- Appraisals and market failure in the creation of conservation easements
• Are ranchers good environmental stewards?
• Reconciling property rights with mineral rights on private land

COURSE OBJECTIVES
By the end of the course, students will:

• Understand the historical context of how land ownership patterns were established across the western U.S.
• Identify key land management agencies at both the state and federal levels, and articulate the variation in mission and approach for each one.
• Have awareness of the most important state and federal laws that guide land management.
• Describe cultural attributes that make the American West unique.
• Understand the complex trade-offs inherent in making land use decisions across the region.
• Articulate management challenges associated with a host of controversial issues, including wildfire management, habitat protection, water use, and energy development.
• Develop a set of personal beliefs regarding the best uses of public, private, and mixed landscapes.

Grading

Participation (Exercises, Field Trips, Discussion): 20%
· Participation in daily exercises
· Participation in class discussions, field activities, and debates

Quizzes: 20% (2 x 10% each)
· Two quizzes will assess student understanding of class material

Capstone (Individual) Projects 40%
· Capstone-Project Final Written Essay (20% of total grade)
· Capstone-Project Presentation (20% of total grade)

Examination: 20%
· Final exam on the last day

Independent Work Expectations:

Readings: Readings are assigned for each exercise and lecture. Readings will serve as guides to the fundamental principles and theoretical constructs in sustainable development as illustrated by land use and will serve as introductions to lecture and field experiences as well as a survey of the historical and contemporary literature on the subject. Students will be expected to come to lecture prepared to discuss the readings and make connections to field exercises and activities.

Quiz Prep: There will be two quizzes given -- one each week -- to serve as assessment vehicles for individual performance, to allow the instructor and TA to gauge progress on course objectives, and provide students with a sense of their performance as the class proceeds. Quizzes will last approximately 45 minutes and specifically cover topics from readings, lecture(s) and field exercises. Preparation time is expected to be 3 hours of studying for each of these quizzes.
**Final Project:** As with all SEE-U courses, students are expected to conduct a final project. This should demonstrate an understanding of a current issue in land use in the American West. The final project will culminate in a 15 minute presentation from each individual student. Students should be prepared to answer questions on their topics raised by their peers and instructors. Additionally, and based in part on feedback generated from the in-class presentation, students will submit a final research paper on their topic. We estimate, minimally, 5-10 hours preparing presentations and 20-30 hours for research, writing, and revising.

**Required Texts**
- Articles and websites will be provided on the course site

**Course Schedule**
Please see the schedule for site visits, course schedule, and assignments in the Syllabus below.

**Faculty Statement on Academic Integrity**
The intellectual venture in which we are all engaged requires of faculty and students alike the highest level of personal and academic integrity. As members of an academic community, each one of us bears the responsibility to participate in scholarly discourse and research in a manner characterized by intellectual honesty and scholarly integrity.

Scholarship, by its very nature, is an iterative process, with ideas and insights building one upon the other. Collaborative scholarship requires the study of other scholars' work, the free discussion of such work, and the explicit acknowledgement of those ideas in any work that inform our own. This exchange of ideas relies upon a mutual trust that sources, opinions, facts, and insights will be properly noted and carefully credited.

In practical terms, this means that, as students, you must be responsible for the full citations of others' ideas in all of your research papers and projects; you must be scrupulously honest when taking your examinations; you must always submit your own work and not that of another student, scholar, or internet agent.

Any breach of this intellectual responsibility is a breach of faith with the rest of our academic community. It undermines our shared intellectual culture, and it cannot be tolerated. Students failing to meet these responsibilities should anticipate being asked to leave Columbia.

**Student Academic Integrity**
Students should be familiar with the [Undergraduate Guide to Academic Integrity](#).

This guide states:

*Academic integrity is the cornerstone of our intellectual community. All scholarship – teaching, research, and student learning – is the product of intellectual exchange. Whether this exchange takes place in books and journal articles, in laboratories, in the design of experiments and the analysis of data, in the classroom, or in students’ written work, it is these joint undertakings that create Columbia’s intellectual community.*
The value of our collective inquiry relies upon trust and honesty – for our individual discoveries are
dependent upon the discoveries of our peers and predecessors, here at Columbia and elsewhere. And all
intellectual work must be evaluated – the work of students is evaluated by faculty; the work of faculty is
evaluated through peer-review. We must, therefore, be able to trust that others are honest in their work
and others must be able to trust that we are honest in ours.

Academic writing can be very challenging, for it requires us to create original work from our synthesis of
the work done by others. In these pages you will learn strategies for developing original work, ways to
ensure that your work is trustworthy, the consequences for submitting work that is dishonest, and the
resources available to assist you in achieving your best work.

Laptops, tablets, and other personal electronic tools
Laptops may be used in lectures for taking notes, but pencil and pad are recommended for the field. In
the field, students may use suggested note taking applications for mobile devices, or notebooks. Laptops
are only allowed for quizzes and presentations if instructed. Group work is only allowed if specified.

Faculty Statement on Disability Accommodations
If you are a student with a disability and have a DS-certified ‘Accommodation Letter’ please come to my
office hours to confirm your accommodation needs. If you believe that you might have a disability that
requires accommodation, you should contact Disability Services at 212-854-2388
and disability@columbia.edu.