University of Alaska Anchorage
School of Education
3211 Providence Drive
Anchorage, Alaska 99508-8269

ED 581 Professional Learning in Science Education: Ecology of Denali

1 Credit, Graded P/NP

Summer 2026

Course Sponsor:	Alaska Geographic, Murie Science and Learning Center, Denali National Park
Instructor:	Anne Beaulaurier
Educational Resource:	Paula Davis
Primary Grading Instructor:	Jessica Brillhart
Facilitating Instructor:	Jessica Brillhart
Contact Information	
Address:	Alaska Geographic, Murie Science and Learning Center P.O. Box 136, Denali Park, AK 99755
Telephone:	(907) 771-8485
Email address:	courses@akgeo.org
Course Meeting Information	
Location:	Murie Science and Learning Center, Denali National Park & Preserve entrance
Start and End Date:	July 24 – 26, 2026
Class Day(s) & Time(s):	July 24th 6:30pm through July 26th, 4pm, continuous residential course
Final Project Due:	Final day of course
Course Description:	Born of a young mountain range, complex geologic origins, placement in the subarctic, weather patterns and a biological history without significant alteration by humans, Denali is an ideal place to study the ecology of an intact ecosystem. Local naturalist Anne Beaulaurier will lead participants in looking at the landscape, from the mega to the micro, as a series of interactions and responses. Course will explore different types of tundra, look for birds and animal signs, seek out patterns on the landscape, and develop a better understanding of Denali's ecosystem. Participants will consider how to integrate their learning from this fieldwork course into their teaching or educational environments.
Intended Audience:	Teachers and other interested educators

Enrollment Restrictions: None

Course Prerequisite/Co-requisites: None

Course Design:

a. Requires 15 contact hours and approximately 30 hours of engaged learning.
b. Does not apply to any UAA certificate or degree program.
c. No UAA lab and/or materials fees beyond standard charges.
d. This Murie Science and Learning Center course will be entirely field-based. Learning will be achieved through lectures, group discussions, field observations, and field activities. This course is based upon the collegial sharing, collaboration, and support of the participants and facilitator as a community of learners. Course activities will include common readings and group discussions, collective learning processes, peer coaching/mentoring, and reflective practices.

Instructional Goals and Defined Outcomes:

RESEARCH BASED THEORY/PRINCIPLES/PRACTICES/TRENDS (CONTENT)

1.0 Instructional Goal:
Instructor will set the stage for the physical factors that influence the landscape of Denali National Park, and thus the biologic activity. Instructor will communicate the importance of curiosity and close observation to detect patterns and clues that uncover an understanding of ecological interactions.

Defined Outcomes:
1.1 Participants will be able to understand how location of the park, formation of the Alaska Range, and weather patterns affect climate, and previous climates that have shaped the landscape.
1.2 Participates will develop an eye for noticing patterns, things that break patterns, and ask questions that help drive understanding of the ecology.

THEORY INTO PRACTICE (APPLICATION)

2.0 Instructional Goal:
Instructor will provide activities that help participants notice patterns and diversity on a grand scale and at a micro scale.

Defined Outcomes:
2.1 Participants will be able to assess landscape for permafrost presence.
2.2 Participants will be able to assess landscape for potential wildlife habitats.

3.0 Instructional Goal:
Instructor will share field guides, stories, literature, art and anecdotal observations to connect participants to place and highlight the interconnectedness of all the inhabitants to each other and the land.

Defined Outcomes:
3.1 Participants will be able to recognize the importance of all aspects of the intact ecosystem not only to one another, but also to humans.
3.2 Participants will engage in a variety of different techniques for learning about individual species.

4.0 Instructional Goal:
Instructor will share basic techniques for tracking as a way of understanding presence and activities of wildlife in the area.

Defined Outcomes:

4.1 Participants will be able to identify tracks of at least 3 of the most common large mammals and understand how using tracks can tell a story.

4.2 Participants will describe how they will integrate their experiences into their teaching or educational environments.

REFLECTION ON THEORY INTO PRACTICE (REFLECTION)

3.0 Instructional Goal:
Engage participants in discussions, reflective journaling and informal sharing about science instruction and how to incorporate gained knowledge and experience into their classrooms.

Defined Outcome:
Participants will review and reflect upon the scientific information covered. Participants will complete a journal, reflecting on how the information can be shared with their students.

RELATIONSHIP TO STANDARDS

4.0 Instructional Goal:
Familiarize participants with science content standards addressed by the strategies and concepts presented.

Defined Outcome:
Participants will identify the Science-Content standards applicable to their classroom.

Writing Style Requirements:
Participants' writing will reflect the clarity, conciseness, and creativity expected of post-baccalaureate certificated educators.

Attendance and Make-up Policy:
Participants are expected to actively participate in all classes as a contributing member of a learning community. Attendance is mandatory, and due to the ongoing field-based nature of this course, make-up work is not possible.

Course Assignments, Assessment of Learning, and Grading System:
Course grading will be Pass/No Pass based upon the following:

a. Participation 50%
Participants will be expected to actively and collegially participate in discussions, activities, and other process experiences during the seminar.

b. Final Project - Journal completion 50%
Participants will complete journal assignments to be turned in to MSLC field guide on the last day of class. Assignments will include thoughtful reflection based upon seminar experience and an application plan of how participants will integrate issues and content discussed into their own classroom setting.

Quality of Work

Grade of "Pass"
Passing work includes all components of the assignment and meets proficient criteria. It is focused, developed, supported, logical, and acceptable work with minimal errors. Work of this quality indicates understanding of key concepts and knowledge base.

Grade of "No Pass"

Work graded "No Pass" may lack key criteria/components of the task and show little or no evidence of conceptual understanding or knowledge utilization. Work may also show minimal or no organization/development and/or clear focus (may be difficult to follow) and may contain numerous errors. This grade indicates minimal or no knowledge or concept development. It may also mean that work was not attempted.

Course Calendar/Schedule:

Friday	6:00 p.m. – 6:30 p.m.	Greeting and check in at MSLC
	6:30 p.m. – 7:30 p.m.	Introduction, orientation & overview o What is ecology? o What is a naturalist? o What makes Denali National Park special and an ideal place to study ecology? o Observation and patterns
	7:30 p.m. – 9:00 p.m.	Drive to MSLC Field Camp and settle in
Saturday	9:00 a.m. – 5:00 p.m.	Exploration of Denali o Seek vistas for large scale patterns, discussion of plate tectonics, Alaska Range orogeny, and weather patterns/climate. o Visit multiple habitat types to explore local microclimates and diversity in boreal forest, wet tundra, riparian areas, and river bars. o Discussion of individual species and their roles in community ecology.
	6:00 p.m. – 8:00 p.m.	Dinner and evening discussions o Discuss the day's findings and discoveries. o Discuss the experience of tuning your eye to be an observer at different scales. o Related readings o Teacher study group to discuss the day's activities and how the information can be shared with students o Identify applicable science content standards addressed by course content
Sunday	9:00 a.m. – 3:00 p.m.	Continued exploration of Denali o Continued exploration of habitats and species, with a focus on alpine environments.
	3:00 p.m. – 4:00 p.m.	Return drive to MSLC

Final Project Due: last day of course

Course Texts, Readings, Handouts, and Library Reserve:

<u>Required Text/Materials:</u>
None

Suggested Text/Materials:

Capps, D., McLane, S., and Chang, L., 2020. *Denali National Park and Preserve Geology Road Guide*. National Park Service, Denali National Park and Preserve, Denali Park, Alaska. Retrieved from: https://irma.nps.gov/DataStore/Reference/Profile/2244417

Chester, S. (2016). *The Arctic Guide: Wildlife of the Far North*. Princeton University Press.

Holleman, M., Lord, N., and Moler, S.H., 2026. *Alaska: A Literary Field Guide.* Skipstone.

National Park Service (n.d.) *Learn about the park.* Retrieved from: https://www.nps.gov/dena/learn/index.htm

National Park Service (n.d.) *Nature.* Retrieved from: https://www.nps.gov/dena/learn/nature/index.htm

Sherwonit, B. (2000). *Denali: A Literary Anthology*. The Mountaineers Books.

Content References:

Capps, D., McLane, S., and Chang, L., (2020). *Denali National Park and Preserve Geology Road Guide*. National Park Service, Denali National Park and Preserve, Denali Park, Alaska. Retrieved from: https://irma.nps.gov/DataStore/Reference/Profile/2244417

Chester, S. (2016). *The Arctic Guide: Wildlife of the Far North*. Princeton University Press.

Collet, D.M, (2008). *Insects of South-Central Alaska.* Kenai Watershed Forum.

Hollelam, M., Lord, N., and Moler, S.H., (2026). *Alaska: A Literary Field Guide.* Skipstone.

Laursen, G.A. and R.D. Seppelt. (2009). *Common Interior Alaska Cryptogams: Fungi, Lichenicolous Fungi, Lichenized Fungi, Slime Molds, & Mosses and Liverworts*. University of Alaska Press

Sibley, D.A. (2016). *The Sibley Field Guide to Birds of Western North America (2nd ed.).* Alfred A. Knopf.

National Park Service (n.d.) *Nature.* Retrieved from: https://www.nps.gov/dena/learn/nature/index.htm

Standards References:

Alaska Comprehensive Center. (2012). *Guide to Implementing the Alaska Cultural Standards for Educators.* Juneau, AK: Alaska Department of Education and Early Development. Retrieved from: https://education.alaska.gov/standards/cultural

Alaska Native Knowledge Network. (1998). *Alaska standards for culturally responsive schools.* Fairbanks, AK: University of Alaska Press. Retrieved from: http://www.ankn.uaf.edu/publications/culturalstandards.pdf

National Research Council, the National Science Teachers Association, the American Association for the Advancement of Science, and Achieve. (2013). *The next generation science standards.* Retrieved from http://www.nextgenscience.org/next-generation-science-standards.

State of Alaska Department of Education and Early Development. (2019). *Content and performance standards for Alaska students.* Juneau, AK: Author. Retrieved from: https://education.alaska.gov/akstandards/standards/Content_and_Performance_Standards_edited.pdf

State of Alaska Department of Education and Early Development. (2019). *K-12 Science Standards for Alaska*. Juneau, AK. Author. Retrieved from: https://education.alaska.gov/akstandards/science/science-standards-for-alaska.pdf?v=1

State of Alaska Department of Education and Early Development. (2012). *Alaska English/Language Arts and Math Standards.* Juneau, AK: Author. Retrieved from: https://education.alaska.gov/akstandards/standards/ELA_and_Math.pdf

Informed by the School of Education Vision, Mission, and Conceptual Framework:
We believe that the preparation and support of professional educators is the shared responsibility of the University of Alaska Anchorage and our partners, and that our programs must evolve dynamically in response to unique community needs, research, and continuous program assessment. This PACE course is designed to meet a professional development need in response to our partner school districts and professional organizations. The course fits within the mission of the UAA School of Education as we encourage lifelong learning to meet the challenges of a rapidly changing world.

Link to Alaska Educator Content and Performance Standards:
This professional development is rooted in the fundamentals of Alaska's standards for teachers, administrators, and beginning teachers in Alaska's Administrative Code, 4 AAC 04.200. It is offered to encourage and support practicing educators attain, maintain, or surpass the standards for effectively preparing today's students for successful lives and productive careers.
(https://education.alaska.gov/standards/other-standards)

Learning Forward Standards for Professional Learning:
This course is further informed by the Learning Forward Standards for Professional Learning which outline the "characteristics of professional learning that leads to effective teaching practices, supportive leadership, and improved student results." As explicit in the standards, "professional learning is for educators to develop the knowledge, skills, practices and dispositions they need to help student perform at a higher levels." (https://standards.learningforward.org)

Course Policies:

Incomplete Grades
Due to the nature of this course, grades of incomplete will not be permitted.

ADA Policy
The provision of equal opportunities for students who experience disabilities is a campus-wide responsibility and commitment. Disabilities Support Services (DSS) is the designated UAA department

responsible for coordinating academic support services for students who experience disabilities. To access support services, students must contact DSS (786-4530 or 786-4536 TTY) and provide current disability documentation that supports the requested services. Disability support services are mandated by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990. Additional information may be accessed at the DSS Office in RH 105 or on-line at www.uaa.alaska.edu/dss.

Academic Dishonesty Policy
Academic integrity is a basic principle that requires all students to take credit only for the ideas and efforts that are their own. Cheating, plagiarism, and other forms of academic dishonesty are defined as the submission of materials in assignments, exams, or other academic work that is based on sources prohibited by the faculty member. Academic dishonesty is defined further in the "student Code of Conduct." In addition to any adverse academic action that may result from the academically dishonest behavior, the University specifically reserves the right to address and sanction the conduct involved through student judicial review procedures and the Academic Dispute Resolution Procedure specified in the University catalog.

Professional and Ethical Behavior
University of Alaska Anchorage School of Education students are expected to abide by the State of Alaska Code of Ethics of the Education Profession and professional teaching standards as they concern students, the public, and the profession. The standards, adopted by the Professional Teaching Practices Commission, govern all members of the teaching profession. A violation of the code of ethics and professional teaching standards are grounds for revocation or suspension of teaching certification.

Technology Integration
University of Alaska Anchorage School of Education students are expected to (a) demonstrate sound understanding of technology operations and concepts; (b) plan and design effective learning environments and experiences supported by technology; (c) implement curriculum plans that include technology applications in methods and strategies to maximize student learning; (d) facilitate a variety of effective assessment and evaluation strategies; (e) use technology to enhance productivity and professional practice; and (f) understand the social, ethical, and human issues surrounding use of technology in PreK-12 schools and apply those principles in practice.

Course Safety and Risk
This course is sponsored by Alaska Geographic and the Murie Science and Learning Center. The University of Alaska Anchorage provides the credit option for interested participants. This course takes place entirely outdoors and within a remote area of Alaska. Field courses, such as this, do have inherent risks. These risks will be outlined by the course instructors and in the Alaska Geographic Participant Release of Liability, Waiver of Claims, Assumption of Risks, and Indemnity Agreement form. This form will be provided at the time of registration and a signed copy is required in order to attend.

Non-Discrimination Policy
The University of Alaska is an affirmative action/equal opportunity employer and educational institution. The University of Alaska does not discriminate on the basis of race, religion, color, national origin, citizenship, age, sex, physical or mental disability, status as a protected veteran, marital status, changes in marital status, pregnancy, childbirth or related medical conditions, parenthood, sexual orientation, gender identity, political affiliation or belief, genetic information, or other legally protected status. The University's commitment to nondiscrimination, including against sex discrimination, applies to students, employees, and applicants for admission and employment. Contact information, applicable laws, and complaint procedures are included on UA's statement of nondiscrimination available at www.alaska.edu/nondiscrimination.