

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

ED 581
Wildfire and You in a Changing Climate

1 Credit, Graded Pass/No Pass
Summer 2021

Course Sponsor: Alaska Natural Resources and Outdoor Education Assn (ANROE)

Instructor: Mary Timm

Contact Information

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Tok, AK 99780

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Course Meeting Information

Location: Online website and Zoom classes

Start and End Date: Jan 28 – April 1, 2021

Class Day(s) & Time(s): Zoom classes

Jan 28 6pm – 8pm

Feb 4 6pm – 8pm

Feb 18 6pm – 8pm

Mar 4 6pm – 9pm

FaceTime individual meeting (final project)

Time/date TBA - before April 1

Final Project Due: April 1, 2021

Course Description: This course is designed to train educators to teach our youth about wildland fire ecology and wildland-urban interface fire protection in our changing climate. The role of wildfire in Interior Alaska's forest ecology and forest sustainability, the effect of climate changes on Interior Alaska's fire regime, and the

importance of safety from and prevention of wildfire in populated areas are critical to residents in Interior Alaska. This course will immerse educators in the curricula “**Role of Fire in Alaska**” (US Fish & Wildlife Service), “**FireWorks**” (Fire Science Laboratory, USDA Forest Service), “**Project Learning Tree**” and in the Alaska **Firewise** program (AK DNR, Div of Forestry), allowing teachers in-depth study of these curricula and programs and enabling them to design **NGSS** aligned science units for their classroom.

Intended Audience: K-12 teachers, aides, resource agency educators

Enrollment Restrictions: None

Course Prerequisite/Co-requisites: None

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 Standards for Alaska’s Teachers:

This professional development is rooted in the fundamentals of the standards for Alaska Teachers. It is offered to encourage and support practicing educators in attaining, maintaining, or surpassing the standards that, as stated in Standards for Alaska’s Teachers, “clearly define the skills and abilities our teachers and administrators need to possess to effectively prepare today’s students for successful lives and productive careers.” (Mike Hanley, <http://www.eed.state.ak.us/standards/pdf/teacher.pdf>)

Learning Forward Standards for Professional Learning:

This course 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 performance at a higher level.” (<https://learningforward.org/standards-for-professional-learning>)

Course Design:

- a. Requires 15 contact hours and approximately 30 hours of engaged learning outside of class.
- b. Does not apply to any UAA certificate or degree program.
- c. No UAA lab and/or materials fees beyond standard charges.
- d. 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 lecture, small group discussion via Zoom, lab demonstrations, self directed lessons

(includes readings, video, short virtual “field” trips), homework assignments, group review and unit development.

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|--|--------|
| 4 Zoom meeting | 9 hrs |
| 1 FaceTime meeting | 1 hr |
| 5 self directed lessons (videos/readings/assognments) | 15 hrs |
| Final project | 4 hrs |
| Independent/personalized curricula explorations and applications | 8 hrs |
| Reflections, informal dialogue and collaboration, diffused learning | 8 hrs |

Instructional Goals and Defined Outcomes:

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

1.0 Instructional Goal:
Introduce the principles of fire ecology, behavior and management in Interior Alaska.

Defined Outcome:

- 1.1 Participants will examine key vocabulary concerning and concepts of wildfire
- 1.2 Participants will utilize these key elements in their classroom discussions and activities.

1.01 Instructional Goal:
Familiarize participants with concepts and elements of Alaska FireWise program.

Defined outcome:

Participants will identify the importance of utilizing FireWise strategies and will incorporate these strategies into their classroom activities.

THEORY INTO PRACTICE (APPLICATION)

2.0 Instructional Goal:
Provide a structure for participants to translate the principles of wildfire ecology into their classroom practices.

Defined Outcome:

Participants will examine the available wildfire curricula and resources and will select/adapt strategies/activities for implementation in their classrooms.

REFLECTION ON THEORY INTO PRACTICE (REFLECTION)

3.0 Instructional Goal:
Engage participants in examinations of the principles of fire management and fire protection and the outcomes of implementation.

Defined Outcome:
Participants will analyze and discuss upon the principles and strategies of fire management protocols in Alaska and the outcomes of FireWise implementation.

RELATIONSHIP TO STANDARDS

4.0 Instructional Goal:
Familiarize participants with the national (NGSS) standards addressed by the strategies, concepts and activities presented.

Defined Outcome:
Participants will identify the standards met by implementing them into their final class project.

Writing Style Requirements:

Participants' writings/projects will reflect the clarity and creativity expected of certificated educators.

Attendance and Make-up Policy:

Participants are expected to actively and collegially participate in all classes as a contributing member of a learning community. Attendance at every session is, therefore, very important and make-up for missed classes will be approved by the instructor on an exception basis only.

Course Assignments, Assessment of Learning, and Grading System:

Course grading will be Pass/No Pass based upon the following: (Pass – 80% or better
Fail – less than 80%)

- a. Participation and Collegial Support 25%
Participants will be expected to actively and collegially participate in discussions, activities, and other process experiences during the Zoom classes
- b. Self directed lessons, homework and research 50%
Participants will complete all self directed lessons (including required videos, readings and assignments) in a timely fashion
- b. Final project 25%
Each participant will develop a short classroom teaching unit (including a minimum of three (3) activities taken from the curricula studied in this course) for their classroom. This unit will be submitted to the instructor and discussed with her in a personal FaceTime meeting (TBA) before April 1, 2021.

Quality of Work

Final project will be graded for quality as follows:

“Pass” work is complete, comprehensive, and well prepared; clearly indicates that time and intellectual effort was expended in preparing the assignment.

“No Pass” indicates that the student has not met the guidelines for “Pass” work.

Course Calendar/Schedule:

ZOOM mtg #1 - Jan 28, 2021 6pm-8pm

Welcome - provide contact info

Class “set-up” Face-to-Face
Self directed learning
On-line curricula

ZOOM
www.fireak.weebly.com
Role of Fire in Alaska
FireWorks
FireWise Alaska
Project Learning Tree

Discuss course requirements –

complete ALL required videos/assignments/meetings and Final Project

Discuss access for PLT site

Discuss dichotomous keys / do example

Questions / discussion

Self Directed Lesson 1

plt.org
fireak.weebly.com

FOREST & TUNDRA ECOLOGY
view Lesson 1 “Forest & Tundra Ecology”
read “Identifying Objects” activity
view “Trees of the Boreal Forest”
“Common Boreal Forest Plants”
“Taxonomy & Classification”
read FireWorks ID activities
Homework “Boreal Plant Quiz” - via email

ZOOM mtg #2 - Feb 4, 2021 6-8pm

Questions / concerns / suggestions

Navigating the curricula Role of Fire
FireWise

Self Directed Lesson 2

plt.org
fireak.weebly.com

FIRE EFFECTS
view Lesson 2 “Fire Effects”
view “Physical Features - Permafrost”
“Types of Fire”

“What Is Fire”

“Spruce Rust”

Homework “Fire Triangle” - create 5 triangles
“How Hot a Fire?” - use your 5 triangles and put in order
(to be discussed in ZOOM mtg #3)
read “Succession Race” (Role of Fire activity)

Self Directed Lesson 3

FIRE MANAGEMENT

plt.org

view Lesson 3 “Fire Management”

fireak.weebly.com

view “Living With Fire”

“Science of Fire”

“How We Fight Wildfires”

“Why Certain Wildfires Are Necessary”

“How to Stop a Wildfire”

read “How We Manage Fire” (Role of Fire activity)

ZOOM mtg #3 - Feb 18, 2021 6pm – 8pm

questions / concerns / suggestions
review & discuss Fire Triangle assignment

Self Directed Lesson 4

CLIMATE CHANGE

plt.org

view Lesson 4 “Climate Change”- watch all imbedded video

fireak.weebly.com

“What Is Climate Change”

“Climate Change 101”

???? NASA studies ?????

“Weather vs Climate”

Self Directed Lesson 5

FIREWISE

2 hrs

plt.org

view Lesson 5 “FireWise” - watch all imbedded video

fireak.weebly.com

view “FireWise #1”

read “Ready-To-Go Activities for your Students”

Homework “FireWise #2” - via email

ZOOM mtg #4 - Mar 4, 2021 6pm- 9pm

3 hrs

questions / concerns / suggestions

discuss "Matchstick Forest"
"Tinker Trees"
"Ready-To-Go" activities - which could you use?

Final Project discussion

- a) written FireWise assessment of 2 homes (one should be yours if possible)
- b) complete PLT Wildfire written assignment
- c) written lesson plan for short Wildfire unit in your classroom using at least 3 activities from the course information

FaceTime mtg – TBA (before Apr 1, 2021)

Individual meeting between participant and instructor to discuss final project

***Final assignment due: April 1, 2021**

Related Professional Organizations:

Alaska Natural Resources and Outdoor Education Assn (ANROE)

North American Association of Environmental Educators (NAAEE)

Course Texts, Readings, Handouts, and Library Reserve:

Required Text/Materials:

All reading, course materials and curricula will be presented at class and are available online.

Content References:

Rodman, Sue. 2009. *FireWise Alaska*. Alaska Wildland Fire Coordinating Group. Alaska Dept of Natural Resources, Division of Forestry (Producer). 32 p.

Smith, Jane Kapler; Abrahamson, Ilana; Berkowitz, Caitlyn; and McMurray, Nancy. 2018. *FireWorks curriculum for elementary school featuring ponderosa, lodgepole, and whitebark pine forests*. Missoula, MT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Missoula Fire Sciences Laboratory (Producer). 148 p.

Smith, Jane Kapler; Abrahamson, Ilana; Berkowitz, Caitlyn; and McMurray, Nancy. 2018. *FireWorks curriculum for middle school featuring ponderosa, lodgepole, and whitebark pine forests*. Missoula, MT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Missoula Fire Sciences Laboratory (Producer). 248 p.

Smith, Jane Kapler; Abrahamson, Ilana; Berkowitz, Caitlyn; and McMurray, Nancy. 2018. *FireWorks curriculum for high school featuring ponderosa, lodgepole, and whitebark pine forests*.

Missoula, MT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Missoula Fire Sciences Laboratory (Producer). 296 p.

US Fish & Wildlife Service. (2007). *Role of Fire in Alaska, K-12 Curriculum Guide*. Anchorage, AK: National Wildlife Refuge System, Alaska Region and AK Dept of Natural Resources, Division of Forestry (Producers). 256 p.

Standards References:

Alaska Comprehensive Center. (2012). *Guide to Implementing the Alaska Cultural Standards for Educators*. Juneau, AK: Alaska Department of Education and Early Development.

Alaska Native Knowledge Network. (1998). *Alaska standards for culturally responsive schools*. Fairbanks, AK: University of Alaska Press.

IRA/NCTE Joint Task Force on Assessment. (1994). *Standards for the assessment of reading and writing*. Newark, DE: NCTE/IRA.

National Council of Teachers of English/International Reading Association. (1996). *Standards for the English language arts*. Newark, DE: NCTE/IRA.

National Research Council (2013). *Next Generation Science Standards: for states, by states*. Washington DC The National Academies Press. <https://doi.org/10.17226/18290>

NCTE Committee on Teacher Preparation and Certification. (1996). *Guidelines for the preparation of teachers of English language arts*. Chicago, IL: NCTE.

State of Alaska Department of Education and Early Development. (1997). *Standards for Alaska teachers*. Juneau, AK: Author.

State of Alaska Department of Education and Early Development. (2006). *Content standards for Alaska students*. Juneau, AK: Author.

State of Alaska Department of Education and Early Development. (1999). *Performance standards for Alaska students*. Juneau, AK: Author.

Course Policies:

Incomplete Grades

An "I" (Incomplete) is a temporary grade. It is used to indicate that a student has made satisfactory progress in the majority of the work in a course, but for unavoidable absences or other conditions beyond the control of the student, has not been able to complete the course. The Incomplete Grade Contract, a signed contract form between the student and the course instructor that stipulates the assignment(s) required to finish the course, is required and must be completed and filed with PACE before an "I" grade is assigned. Course work must be completed by a date specified in the contract, not to exceed one year.

Upon completion of the required course work, the course instructor must submit a change of grade form accompanied by a copy of the incomplete grade contract to the PACE Office. If course work is not completed within one year or if the terms specified on the Incomplete Grade Contract are not met, the student may be assigned a failing grade (F or NP, depending on the grading basis of the course). If course work is not completed within one year and the instructor does not submit a change of grade at that time, the "I" will become a permanent grade and it will be necessary for the student to re-register to obtain credit for the course.

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.

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.

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.