Syllabus

ED 595P-F01 Invasive Plants of Alaska for Educators

1 Credit, Graded P-NP

Summer 2013

Instructors: Katie Villano Spellman
             Christine Villano

Contact Information: Katie Villano Spellman
                     UAF Biology and Wildlife
                     (907)388-5178
                     katie.spellman@alaska.edu

                     Christine Villano
                     Denali Elementary
                     (907)452-6765
                     christine.villano@k12northstar.org

Course Meeting Information
Location: UAF Main Campus, Murie 306
Start and End Date: June 24 – June 26, 2013
Class Day(s) & Time(s): Monday-Wednesday, 10 AM – 4 pm
Final Paper Due: Friday, September 13, 2013

Course Description: Investigate the invasive plants of Alaska in this three day field course. The course covers the ecological and societal impacts of invasive species, identification of problematic invasive species of Alaska, and methods for invasive plant control. The course includes hands-on use of inquiry-based lessons from Alaska-based invasive plants curricula. Participants will travel to UAF’s long-term ecological research sites and engage in a current ecology experiment investigating invasive plants, pollinators and wild berries. The course will enable educators to incorporate real world data into learning activities through a citizen science invasive plants and pollinators project.

Intended Audience: K-12 educators

Enrollment Restrictions: 25 participant maximum

Course Prerequisite/Co-requisites: None

Link to Standards for Alaska Teachers:
This professional development effort 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, “define the skills and abilities our teachers and administrators need to possess to effectively prepare today’s students for successful lives and productive careers.” (Roger Sampson, http://www.eed.state.ak.us/standards/pdf/teacher.pdf)
Course Design:

a. Requires 15 contact hours and an average of approximately 30 hours of engaged learning outside of class.
b. Does not apply to any UAF certificate or degree program.
c. No UAF 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, cooperative learning, experiential field activities, group discussions, and reflective practices.

Instructional Goals and Defined Outcomes:

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

1.0 Instructional Goal:
The instructor will:

1.1 Inform course participants on the identification, ecology and control of invasive plant species in Alaska.
1.2 Present course participants innovative techniques to teach both Alaska state science content standards and grade level expectations through the use of Alaska specific invasive plant curricula.
1.3 Offer course participants strategies to engage K-12 students in current ecological research and environmental stewardship activities

Defined Outcome:
After successful course completion, students will be able to:

1.1 Identify basic concepts of invasive plant ecology, recognize invasive plants of concern in Alaska (such as reed canarygrass, orange hawkweed, and oxeye daisy) and discuss methods used to control invasive plant species (such as manual, mechanical, biological, and chemical control).
1.2 Teach several standards-based lesson plans from Alaska-specific invasive plant curricula.
1.3 Conduct scientific studies on invasive species with K-12 students and foster youth activism in critical topics related to natural resource management and conservation.

THEORY INTO PRACTICE (APPLICATION)

2.0 Instructional Goal:
Provide a framework for teachers to practice inquiry-based teaching, conduct field studies using ecology field techniques, and incorporate research into classroom teaching.

Defined Outcome:
Participants will gain exposure to curricula that incorporate field observations and inquiry-based science activities. Teachers will develop strategies on how to incorporate these curricula into their lesson plans.

REFLECTION ON THEORY INTO PRACTICE (REFLECTION)

3.0 Instructional Goal:
Engage participants in discussions, reflective writing, and informal sharing about science instruction and how to incorporate field science into their classrooms.
Defined Outcome:
Participants will review and reflect on the scientific information and field methods utilized in this course. Participants will write a reflective essay on how the information, methods, and invasive plant curricula can best be shared with their students.

RELATIONSHIP TO STANDARDS

4.0 Instructional Goal:
Familiarize participants with the district, state, and national standards addressed by the strategies and concepts presented.

Defined Outcome:
Participants will review state and district standards covered in lesson plans from Alaska-based invasive plant curricula and discuss how standards will be met at their grade level through lesson implementation.

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 and collegially participate in all classes as a contributing member of a learning community. Attendance is required for the full course.

Course Assignments, Assessment of Learning, and Grading System:
Course grading will be pass/no pass based upon the following. Models or rubrics will be provided for each assignment.

a. Participation and Collegial Support  50%
Participants will be expected to actively and collegially participate in discussions, activities, and other process experiences during the seminars and group sessions

b. Reflective Paper  35%
Participants will spend time in the classroom setting carrying out lessons from an Alaskan invasive plant curriculum. Participants will complete a brief, thoughtful, reflection of their experience teaching about invasive plants in the classroom and gains in student knowledge based on lesson assessment.

c. Assessment  15%
Participants will complete pre- and post-course knowledge and attitudes surveys and participate in course evaluations.

Quality of Work
Assignments, projects, papers, presentations, etc. 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 work is incomplete or chronically late; in inappropriate format; does not meet course standards, shows limited effort and understanding.
Course Calendar/Schedule:

Tuesday, June 24

**Introduction to Invasive Plants**
1. Introduction to invasive plant ecology
2. Identification of invasive plants in Alaska
3. Biology and life history of invasive plants
4. Pathways of introduction for invasive species
5. Methods of invasive plant control

**Introduction to Curriculum Materials**
1. Overview of *Weed Wackers* Elementary Materials
2. Overview of *Invasive Plants Taking Root* Secondary Materials
3. Multimedia access to curriculum materials (websites, CDs, wikis)
4. Introduction to teaching materials kits

**Evening Assignment**
Collect plants to press for a native and non-native plant teaching collection

Wednesday, June 25

**Invasive Plants Field Study I**
1. Identification hike of local native and non-native plants.
2. Mapping invasive plants using ecological field methods and GPS

**Hands-on Experience with K-6 Alaskan Invasive Plant Curricula**
1. Practice three *Weed Wackers* (K-6) lessons:
   - Invader weapons
   - Invasives and disturbance field study
   - Community perspectives on invasive plants

**Plant Identification Workshop**
1. Discuss Plant collection from evening assignment
2. Plant Family characteristics and native and non-native plant identification

Wednesday, June 26

**Field trip to Bonanza Creek Long Term Ecological Research Area**
1. Practice lessons:
   - New territory for weeds
   - Invasives and disturbance field study
2. Conduct invasive plant transect study in burned and unburned habitat
3. Tour of invasive plants, berry, and pollinator research sites
4. Phenology monitoring training for “pollinator attraction” citizen science project

**Service Learning Weed Pull**
1. Pull vetch infestation within research area
2. Discuss how to conduct weed pulls with youth
Connecting teachers with local invasive plant scientists

1. Connecting teachers with invasive plant experts in Alaska
2. Data transfer between students and invasive plant scientists

Friday, September 13    Report project due

Classroom Application of Invasive Plant Lessons

1. Conducting lessons in the classroom
2. Report on teaching experience and change in student attitude toward or knowledge of invasive plants.

Course Texts, Readings, Handouts, and Library Reserve:

Required Text/Materials:


Content References:


Standards References:


**Related Professional Organizations:**
Alaska Committee for Noxious and Invasive Plant Management
Alaska Science Teachers Association

**Course Policies:**

**Audit Policy**
Auditors must complete written work.

**ADA Policy**
The University of Alaska Fairbanks is committed to providing equal access for students with disabilities. The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. We will work with the Office of Disabilities Services (203 WHIT, 474-7043) to provide reasonable accommodation to students with disabilities. If you have a physical or learning disability, please advise us in writing of any special consideration necessary by the beginning of the second class. We will do everything possible to accommodate you in accordance with the Americans with Disabilities Act.

**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 Fairbanks College 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 Fairbanks College 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.