

Submit original with signatures + 1 copy + electronic copy to Faculty Senate (Box 7500).
 See <http://www.uaf.edu/uafgov/facultyandcurriculum/course-degree-procedures/> for a complete description of the rules governing curriculum & course changes.

TRIAL COURSE OR NEW COURSE PROPOSAL

SUBMITTED BY:

Department	Biology and Wildlife	College/School	CNSM
			X2460
Email Contact	dawalker@alaska.edu	Faculty Contact	Donald A. Walker

1. ACTION DESIRED			New Course	X
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F488/ F688 have been proposed

2. COURSE IDENTIFICATION :	Dept	BIOL	Course #	4__ / 6__	No. of Credits	3
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Justify upper/lower division status & number of credits

Justification for upper division: The Arctic Vegetation Ecology: Geobotany course will include detailed background and literature study of Arctic plant communities including their composition, structure, paleo-history, major environmental controls, applications of Arctic vegetation methods to current Arctic issues such as climate change, wildlife management, and changing land-use in the Arctic. It will also provide an

Fall, Spring, Summer (Every, or Even-numbered Years, or Odd-numbered Years) — or As Demand Warrants

7. SEMESTER & YEAR OF FIRST OFFERING (AY2011-12 if approved by 3/1/2012; otherwise AY2012-13) Spring AY2013, even numbered years thereafter

8. COURSE FORMAT:

NOTE: Course hours may not be compressed into fewer than three days per credit. Any course compressed into fewer than six weeks approved by the college or school's curriculum council. Furthermore, any core course compressed to less than six weeks must be approved by the core review committee.

COURSE FORMAT (check all that apply)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input checked="" type="checkbox"/> 6 weeks to full semester
OTHER FORMAT (specify)						
Mode of delivery (specify lecture, field trips, labs, etc)	3-credit-hour lecture course, with lectures and 1 field trip					

9. CONTACT HOURS PER WEEK:

Empty box for contact hours per week.

earned for this course?

If the course can be repeated with variable credit, what is the maximum number of credit hours that may be earned for this course?

CREDITS

13. **GRADING SYSTEM:** *Specify only one. Note: Later changing the grading system for a course constitutes a Major Course Change.*

LETTER :

PASS/FAIL:

RESTRICTIONS ON ENROLLMENT (if any)

14. **PREREQUISITES**

BIOL 115 and 116 or equivalent; BIOL 239 or BIOL 271; or approval of instructor

These will be required before the student is allowed to enroll in the course.

Please specify *positive and negative* impacts on other courses, programs and departments resulting from the proposed action.

Positive impacts

- 1) A much needed course in Arctic vegetation using an interdisciplinary geobotanical approach in the lectures and field. Increasingly needed for multi-disciplinary academic approaches to study, understand, manage, and preserve complex and changing Earth systems.
- 2) Field training in winter ecology, which has traditionally been missing.
- 3) An introduction to Arctic vegetation science. This is particularly needed for students in Alaska, many of which will be hired by government and non-government agencies to describe and manage the natural resources of the state. The courses are organized around my primary expertise and over 40-years experience working in Arctic ecosystems.

Negative impacts:

None known.

JUSTIFICATION FOR ACTION REQUESTED

The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. Use as much space as needed to fully justify the proposed course.

The course will provide a much-needed focus on Arctic ecosystems and global Arctic tundra vegetation. The lectures provide broad interdisciplinary approach to understanding the environmental controls of Arctic vegetation. This is important background for students who seek jobs in managing Alaska natural resources and also those interested in impacts of land use changes and climate change on Arctic systems.

During the plant identification component, students will become familiar with a wide variety of vascular plant species, mosses and lichens and plant family characteristics in the herbarium. If they chose to take the Arctic Vegetation Ecology: Field Excursion in the summer, the plant identification will provide a solid background for vegetation sampling, where students otherwise often come with poor knowledge of the local flora.

The course will be offered in 2013, and 2014, and in even-numbered years thereafter.

APPROVALS: Add additional signature lines as needed.

	Date
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Signature, Chair, Program/Department of:

	Date
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[Redacted]

21. POSITIVE AND NEGATIVE IMPACTS

Please specify positive and negative impacts on other courses, programs and departments resulting from the proposed action.

This lecture course is part of 3-course curriculum for exotic vegetation science (see cover letter). These

[Redacted]

ATTACH COMPLETE SYLLABUS (as part of this application). Note: The guidelines are online:

<http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/uaf-syllabus-requirements/>

The Faculty Senate curriculum committees will view the syllabus to ensure that each of the items listed below are included. Items are missing

Preliminary Syllabus for NEW COURSE,
BIOL 4__ / 6__, Arctic Vegetation Ecology: Geobotany
Spring 2013

A. 1. Course information

Title: Arctic Vegetation Ecology: Geobotany

Number: BIOL 4__ / 6__

Credits: 3

Prerequisites: BIOL 115 & 116, Introduction to Plant Biology (BIOL 239) or Principles of Ecology (BIOL 271) or instructor approval

Location: 201 Irving I

Meeting time: **M, W, F**

B. 2. Instructor and contact information

C. Prof. D.A. (Skip) Walker, Alaska Geobotany Center, University of Alaska Fairbanks, ,n-0p1aD5mfh

controls on arctic plant communities, snow ecology, applications to wildlife studies and current Arctic issues. Lectures, discussion sessions, labs, and 1 winter field trip. Prerequisites: BIOL 115 and 116 or equivalent; BIOL 239 or BIOL 271; or approval of instructor. Special fees apply. Stacked with BIOL F6__ (3 + 0.4) Expected proficiencies for taking the course Ability to read, comprehend, and assimilate written information in scientific texts and journals; basic math skills (including algebra); basic word processing and spreadsheets; basic writing and presentation skills, background in ecology, and plants and/or other biological or Earth sciences such as geology, geomorphology, zoology, climatology and remote sensing.

More detailed description: This course consists of four major parts:

1. Lectures: Thirteen lectures. This portion will examine the tundra plant communities and ecology of Arctic tundra. The emphasis will be on Arctic Geobotany, i.e. the relationship of arctic plants and vegetation to the Earth. The focus will be on the factors controlling vegetation patterns, including climate, permafrost, geomorphology, soils, animals, zonation, paleogeography, plant communities, floristics, plant adaptations, and succession patterns. A final exam will cover the material in the lectures.
2. Snow Ecology component: Two lectures plus a 3-day spring field excursion to examine the taiga and tundra systems in winter conditions. The focus will be on snow as a habitat. Activities will include describing snow profiles, observing snow and snow cover habitats and their use by animals in winter, identifying plants in their winter conditions, examining subnival environments and the effects of topography and snow distribution patterns on plant distribution. Students will keep a field book of their observations. A list of required equipment, including outdoor clothing, sleeping bags, pads and other items will be provided prior to the field trip. The trip will not be cancelled because of bad weather unless the roads are impassable. In such case, local day trips will be arranged in the UAF North Campus Lands. Students will be graded on their attendance, snow descriptions and their field notebooks.
3. Arctic plant identification component: Seven labs. Students will learn 160 of the most common Arctic species in Alaska, including trees, shrubs, dwarf shrubs, grasses, sedges, rushes, bryophytes, and lichens. Students will be tested over their ability to identify these species.
4. Oral and written (graduate students only) presentations of research topics. Presentations of in-depth literature review on Arctic Vegetation topic of choice.

F. 5. Course goals and student learning outcomes:

General course goals Provide students with an in-depth knowledge of Arctic vegetation from a geobotanical perspective, knowledge of the relevance of Arctic vegetation to Alaskan climate- and land-use change issues, introduction to snow ecology, and knowledge of a core set of common Arctic Alaskan plants.

Student outcomes (1) Students will gain an understanding of the relationships of arctic plants and vegetation to climate, permafrost, geomorphology, soils, and animals, and the role of these systems in climate change and land-use change issues affecting Alaska. (2) During the snow ecology portion of the course they will gain an in-depth understanding of the physical, chemical and biological properties of snow cover. They will learn to describe snow profiles, identify plants in winter, keep field notebooks for their field observations, and learn modern approaches of snow ecological research. (3) Students will learn to identify a foundation set of 160 Arctic plant species that will allow them to better undertake vegetation sampling and understand wildlife habitat. (4) All students will gain experience giving oral presentations regarding Arctic-vegetation topics of their choice. (5) Graduate students will gain experience in writing and giving oral reviews of the key literature regarding Arctic vegetation and summarizing and presenting material in a conference format.

G. 6. Instructional method:

Lectures:

This portion is a series of lectures that will examine the Arctic tundra. Generally, two lectures will address a topic, followed by a class period that will be devoted to literature that addresses the topic. The emphasis of the lectures will be on the factors controlling vegetation patterns, including climate, permafrost, geomorphology, soils, animals, zonation, paleogeography, biogeography, plant adaptations, and succession patterns,

I. 7. Course Schedule and Assignments:

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8. Course policies:

Academic integrity:

Anyone observed cheating on an examination will receive a "0" for that examination. Anyone found to have used someone else's work without crediting that person (plagiarizing) will receive a "0" for the assignment. When in doubt, always identify your sources. This applies to all material derived from the web. Please speak with me if you have any questions about how to properly use other people's work.

For additional detail, see

<http://www.uaf.edu/library/instruction/handouts/Plagiarism.html>

Attendance policy:

Students are expected to attend every class and late arrival is not tolerated at the beginning of the class. Student will receive 10 points for attendance at each lecture and oral presentation of the student oral presentation classes.

9. Evaluation:

Summary of grading points:

Undergraduate student grading (BIOL 4__ students):

Attendance at lectures and labs (10 pts/class, 30 classes)	300 pts
Oral presentation of research topic	200
Snow Ecology snow pit descriptions & field book	100
Final Lecture Exam	200
Final plant identification exam	200
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TOTAL	1000 pts

Graduate student grading (BIOL 6__ students):

Attendance at lectures and labs (10 pts/class, 30 classes)	300 pts
Oral presentation of research topic	200
Snow Ecology snow pit descriptions & field book	100
Final plant identification exam	200
Final research paper	200
Lecture on literature review (discussion session)	100
Moderator for discussion session (50 pts)	50
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TOTAL	1350 pts

These criteria may be modified somewhat as the course progresses.

Final grades will be as follows: greater than or equal to 90% = A; 80-89% = B; 70-79% = C; 60-69% = D; < 60% = F.

Undergraduate student expectations and grading:

All students are expected to accomplish the following:

- Attend all lectures, literature discussion groups, labs and exams on time. There will be no make-up for missed classes and half credit for late attendance. Good reasons for missing the classes will be accepted and cleared with the instructor before the class. (10 points for each for 30 sessions, 300 total points).
- Give a 30-minute oral presentation (including discussion) literature review of a topic of interest related to Arctic vegetation. Guidelines for the presentations and grading criteria for the presentations will be handed out early in the semester. (200 points).
- Attend the 3-day snow ecology field trip, describe snow pits and keep field book of observations (100 points).

