

Submit original with signatures + 1 copy + electronic copy to Faculty Senate (Box 7500).
See <http://www.uaf.edu/uafgov/faculty-senate/curriculum/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
Prepared by	Donald A. Walker	Phone	X2460
Email Contact	dawalker@alaska.edu	Faculty Contact	Donald A. Walker

1. ACTION DESIRED

(CHECK ONE):

Trial Course

☐

New Course

4xx/6xx

☒

2. COURSE IDENTIFICATION:

Dept

BIOL

Course #

~~462/662~~

No. of Credits

2

Justify upper/lower division status & number of credits:

Arctic Plants and Vegetation Ecology: FIELD

Justification for upper division: The Arctic Plants and Vegetation Ecology: FIELD course includes detailed field examination of Arctic plants and plant communities including their composition, structure, and major environmental controls. An emphasis will be on field sampling using the Braun-Blanquet relevé approach. The course requires a solid foundation in basic biology (BIOL 115 & 116) and either Introduction to Plant Biology (BIOL 239) or Principles of Ecology (BIOL 271).

Justification for graduate 600 stacking: Graduate students will be expected to produce a 5-page written research paper involving analysis of field data collected during the excursion and an in-depth knowledge of the literature related to their study. They will also be expected to act as team leaders for the vegetation sampling and actively participate in the logistics for the expedition.

Justification for 2 credit hours: This course is part of a 2-course package that consists of a spring semester 2-credit hr LECTURE component, and this summer 2-hr field FIELD (practicum). Students can enroll in either or both parts. The FIELD portion of the course consists of the following parts:

1. 2-day preparation period consisting of overview lectures 4 hours (240 minutes of lecture) student planning and logistic preparation 12 hrs (720 minutes of practicum)
 2. 10-day field excursion on the Dalton Highway: 12 hours (720 minutes) of lecture and 68 hours (4080 minutes) of practicum.
 3. 2-day preparation and presentation of student oral summaries of field projects. 16 hours (960 minutes) of practicum.
- TOTAL about 16 hours (960 minutes) lecture and 96 hours (5760 minutes) practicum.**

The package of two 2-hr courses is offered instead of a single 4-hr course because some students taking the LECTURE component will not be able to participate in the FIELD component because of work other commitments (e.g. those enrolled in the Wildlife Department with summer internships or jobs). Also we will list both courses as University of the Arctic offerings and want to give the students the option of taking either the LECTURE or the FIELD component or (preferably) both.

RECEIVED

OCT - 5 2011

Dean's Office

College of Natural Science & Mathematics

3. PROPOSED COURSE TITLE:

Arctic Plants and Vegetation Ecology: Field

4. To be CROSS LISTED?

YES/NO

No

If yes, Dept:

Course #

Governance

10/7/11 KQ

(Requires approval of both departments and deans involved. Add lines at end of form for such signatures.)

5. To be STACKED?	YES/NO	Yes	If yes, Dept.	BIOL	Course #	662
6. FREQUENCY OF OFFERING:		Spring				
		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)				Students should enroll in spring, course will be taught in early June. First offering AY2012-13.		

The package of two 2-hr courses is offered instead of a single 4-hr course because some students taking the LECTURE component will not be able to participate in the EXCURSION component because of work or other commitments (e.g. those enrolled in the Wildlife Department with summer internships or jobs). Also we will list both courses as University of the Arctic offerings and want to give the students the option of taking either the LECTURE or the EXCURSION component or (preferably) both.

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 must be 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 type="checkbox"/> 6 weeks to full semester
OTHER FORMAT (specify)	14 day course					
Mode of delivery (specify lecture, field trips, labs, etc)	Lectures and Field Trip					

9. CONTACT HOURS PER WEEK:

<input checked="" type="checkbox"/> 8	LECTURE hours/weeks	<input type="checkbox"/>	LAB hours /week	<input checked="" type="checkbox"/> 48	PRACTICUM hours /week
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Note: # of credits are based on contact hours. 800 minutes of lecture=1 credit. 2400 minutes of lab in a science course=1 credit. 1600 minutes in non-science lab=1 credit. 2400-4800 minutes of practicum=1 credit. 2400-8000 minutes of internship=1 credit. This must match with the syllabus. See <http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/guidelines-for-computing-/> for more information on number of credits.

OTHER HOURS (specify type)	Explanation:
	<p>The course consists of the following parts:</p> <ol style="list-style-type: none"> 1. 2-day preparation period consisting of overview lectures 4 hours (240 minutes of lecture) student planning and logistic preparation 12 hrs (720 minutes of practicum). 2. 10-day field excursion on the Dalton Highway: 12 hours (720 minutes) of lecture and 68 hours (4080 minutes) of practicum. 3. 2-day preparation and presentation of student oral summaries of field projects. 16 hours (960 minutes) of practicum. <p>TOTAL about 16 hours (960 minutes) lecture and 96 hours (5760 minutes) practicum.</p>

10. COMPLETE CATALOG DESCRIPTION including dept., number, title, credits, credit distribution, cross-listings and/or stacking (50 words or less if possible):

BIOL F4__ Arctic Plants and Vegetation Ecology: Field.
2 Credits. Offered Spring Even-numbered Years
14-day course with 10-day field excursion along the Elliott and Dalton Highways. Examination and field sampling of a wide variety of Arctic ecosystems and plant communities in the Brooks Range Arctic Foothills and Arctic Coastal Plain. BIOL 115 and 116 or equivalent; BIOL 239 or BIOL 271; or approval of instructor. Special fees apply. Stacked with BIOL F662 (2)

11. **COURSE CLASSIFICATIONS:** Undergraduate courses only. Consult with CLA Curriculum Council to apply S or H classification appropriately; otherwise leave fields blank.

H = Humanities

S = Social Sciences

Will this course be used to fulfill a requirement for the baccalaureate core? If YES, attach form.

YES:

NO:

X

IF YES, check which core requirements it could be used to fulfill:

O = Oral Intensive, Format 6

W = Writing Intensive, Format 7

Natural Science, Format 8

12. **COURSE REPEATABILITY:**

Is this course repeatable for credit?

YES

NO

X

Justification: Indicate why the course can be repeated (for example, the course follows a different theme each time).

How many times may the course be repeated for credit?

0

TIMES

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

CREDITS

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:

X

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.

15. **SPECIAL RESTRICTIONS, CONDITIONS**

16. **PROPOSED COURSE FEES**

\$ 500

Has a memo been submitted through your dean to the Provost for fee approval?

Yes/No

NO

Note: The proposed fee is based on a quote from Tiaga Adventures outfitters in Fairbanks to rent the following items necessary for the course. This is likely a high quote. We are exploring other options through CH2MHill and possibly a supplemental funding request to NSF. We will adjust the fee based on the final cost.

Proposed North Slope camp gear list for proposed Arctic Ecology course, 7-20

Quantity	Item
1 ea	2 kw generator – with containment
1 ea	Generator containment berm
1 ea	Dyna-Glow heater est burn rate @ 1 tank per day.
1 ea	Western Shelter 20' tent with no insulation, send piece of Geotech for floor
1 ea	Western Shelter outhouse tent without inner seat
1 ea	Kitchen box for 26 persons (extra settings)
2 ea	Reliance Hassock camp toilet
	Trash compactor bags, small individual trash bags (at least 600 ea), TP
	Hand wash basin including soap and towel
10 ea	5-gallon plastic buckets with lids for transporting food, settling water, and for removing human waste.
3 ea	Coleman stoves (white gas)
1ea	Coleman lantern (white gas)+ wicks

2 ea	Fuel funnel
QTY	Spare Coleman stove parts including generator, pump, lantern wicks – on order
30 g	Coleman fuel (est. 2 stoves @ 4 hours day; 2.5 pints per 2 hrs high x 12 days)
QTY	5 gallon cans of kerosene
10 g	Gasoline for generators (1.1 gallons = 9.5 hours) to be picked up in Inuvik
2 ea	6 g jerry cans
1 ea	Expedition Katadyn water filter for camp use
	Misc camp gear – burning paste, matches, flagging tape, duct tape
	Misc generator items including spare plugs, oil, HEET, and fuel spill diapers,
	Misc tools – 1ea sledgehammer, hammer, drill, rebar, line
1 ea	Extension cord
1 ea	Surge strip
5 ea	Light folding tables
20 ea	Light folding chairs
10 ea	Coolers (for cool food in, storage, trash out)
2 ea	Airpot large thermos
1 ea	MAS first aid kit
1 ea	Satellite phone
3	Vans for transporting 24 people
1	Covered pickup for transporting equipment

Students will provide their own personal tents, sleeping bags, sleeping pads, eating gear, and food.

17. PREVIOUS HISTORY

Has the course been offered as special topics or trial course previously?

YES

Yes/No

If yes, give semester, year, course #, etc.:

Spring semester 2012, Special Topics course

18. ESTIMATED IMPACT

WHAT IMPACT, IF ANY, WILL THIS HAVE ON BUDGET, FACILITIES/SPACE, FACULTY, ETC.

The first 2-days and last 2 days of the course will require a lecture room with Powerpoint projector facilities sufficient for 15 students.

The field excursion portion will require 2-weeks of salary for two trained vegetation field ecologists to help with the course and instruction.

19. LIBRARY COLLECTIONS

Have you contacted the library collection development officer (kljensen@alaska.edu, 474-6695) with regard to the adequacy of library/media collections, equipment, and services available for the proposed course? If so, give date of contact and resolution. If not, explain why not.

No

X

Yes

The course will not require extensive library. All required reading will be posted on the course web site.

20. IMPACTS ON PROGRAMS/DEPTS

What programs/departments will be affected by this proposed action?
Include information on the Programs/Departments contacted (e.g., email, memo)

21. POSITIVE AND NEGATIVE IMPACTS

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

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.

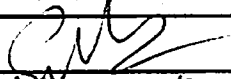
This course is the main field component of the Arctic Plants and Vegetation Ecology course proposed for spring semester 2013. The summer scheduling is needed because of the short time period that is available for field courses during the fall-spring academic year.


The course will provide a much-needed field focus on Arctic Ecosystems with an emphasis on hands-on learning and a natural history of the Arctic. This course is a key to understanding the issues related to Arctic climate change, and how changing land cover and land use in the Arctic will impact Arctic systems and people living in the Arctic.

This course will take a broad interdisciplinary approach to understanding the global Arctic tundra vegetation. During the course, students will become familiar with a wide variety of vascular plant species, mosses and lichens in the field and with the great variety of boreal forest and arctic ecosystems that are accessible along the Dalton and Elliott highways. They will also be trained in methods of vegetation sampling, primarily those needed for jobs in agencies that collect vegetation data. Students will be trained in the methods used for the U.S. National Vegetation Classification and the international Braun-Blanquet relevé approach.

The course is the excursion component of a 2-course package. A 2-credit lecture course will be offered separately during the spring semester 2013 and 2014. (See accompanying New Course Proposal for Arctic Plants and Vegetation Ecology: Lecture.) The Excursion component will not be offered in 2013, but going forward from 2014, in even-numbered years, students can take either the LECTURE or FIELD or both courses (preferred option).

APPROVALS: Add additional signature lines as needed.

	Date	Oct 3, 2011
Signature, Chair, Program/Department of:		

	Date	10/4/11
Signature, Chair, College/School Curriculum Council for:		

	Date	Oct 5, 2011
Signature, Dean, College/School of:		

	Date	
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Signature of Provost (if applicable)

Offerings above the level of approved programs must be approved in advance by the Provost.

ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE

	Date	
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Signature, Chair

Faculty Senate Review Committee: ___Curriculum Review ___GAAC

___Core Review ___SADAC

ADDITIONAL SIGNATURES: (As needed for cross-listing and/or stacking)

	Date	
Signature, Chair, Program/Department of:		
	Date	
Signature, Chair, College/School Curriculum Council for:		
	Date	
Signature, Dean, College/School of:		

Syllabus for NEW COURSE, BIOL 462 / 662, Arctic Vegetation Ecology: Field, Summer 2014

1. Course information

Title: Special Topic, Arctic Vegetation Ecology: Excursion

Number: BIOL 462 / 662

Credits: 2

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

Location: TBA

Meeting time: TBA

2. Instructor and contact information

Prof. D.A. (Skip) Walker, Alaska Geobotany Center, University of Alaska Fairbanks, Arctic Health Building, Room 254, X 2460, dawalker@alaska.edu. Office hours: Generally available, call before coming.

3. Course readings/Material:

Readings: Numerous papers will be read and are in the assignments listed in the course calendar and will be posted on line at <http://www.geobotany.uaf.edu>. These three references provide a good overview of the Dalton Highway transect for the Excursion:

1. Brown J, Kreig RA. 1983. Guidebook to permafrost and related features along the Elliot and Dalton highways, Fox to Prudhoe Bay, Alaska. Fairbanks, AK: Division of Geological and Geophysical Surveys.
2. Walker DA, Hamilton TD, Ping C-L, Daanen RP, Streever WW. 2009. Dalton Highway Field Trip Guide for the Ninth International Conference on Permafrost. Fairbanks, AK: Division of Geological and Geophysical Surveys.

Required materials:

The course will provide a large group meeting and eating tent, Coleman stoves, water purification, first aid kit, satellite phone, generator, and vehicles. Students will need to purchase food and have money for eating at Coldfoot and Prudhoe Bay. A list of required equipment, will be provided to students before the course starts. Students will need to enroll early and contact the organizers to get a list of required equipment, including tents, sleeping bags, sleeping pads, rain gear, footwear, sun protection, bug protection, personal gear and other camping equipment.

4. Course description:

Course catalog description: BIOL 462 / 662. Special Topic, Arctic Vegetation Ecology: Field. 2 Credits. 14-day course with 10-day field excursion along the Elliott and Dalton Highways. Examination and field sampling of a wide variety of Arctic plant communities in the Brooks Range Arctic Foothills and Arctic Coastal Plain.

More detailed description: This course will consist of:

1. 2 days of preparation with lectures and logistics for the excursion.
2. 10-day excursion
3. 2 days of student presentations at the end.

This course is based on the guidebook and field trip conducted during the Ninth

International Conference on Permafrost, and the 2010 IARC Summer Field School. The trip will have a strong emphasis on Arctic Vegetation and field sampling.

5. Course goals and student learning outcomes

The goals for the course are to: (1) Provide students with an in-depth field experience of Arctic vegetation and application of vegetation science to current Arctic issues. (2) Provide methods of field sampling of Arctic vegetation in a variety of Arctic plant communities. (3) Visit arctic research sites, including Finger Mountain, Atigun Pass, Toolik Lake, Imnavait Creek, Happy Valley, Sagwon, Franklin Bluffs and Prudhoe Bay.

6. Instructional method and grading criteria:

2-day preparation

Introductory lectures in the mornings will give an overview of the course and ecosystems along the Dalton Highway. In the afternoons, students will develop a research topic to be examined during the excursion. They will also prepare for the excursion by buying food, needed supplies and personal gear. Students should become familiar with the field guides (Walker et al. 2009, Brown and Krieg 1983) for the Dalton Highway route.

10-day field excursion:

The course will follow the route and much of the content of the 2010 IARC Summer Field School course, “Arctic in a changing climate: Physical and biological linkages to permafrost change across an Arctic climate gradient” (Walker et al. 2009), but the emphasis will be on vegetation along the Dalton Highway. We will establish three camps in the Brooks Range, Arctic Foothills, and Arctic Coastal Plain — Galbraith Lake, Happy Valley, and near Deadhorse — where we will camp and spend two days at each location exploring the local vegetation, soils, permafrost, geology, and land-use and climate-change issues. The course will have several field lectures, conducted during most mornings, using materials from past and existing research projects, including vegetation analyses of zonal vegetation, riparian vegetation, poplar groves, pingos, patterned ground, acidic and nonacidic tundra, tussock tundra, alpine tundra, and vegetation mapping. In the afternoons students will learn the methods of vegetation sampling and collect sample data from representative vegetation using the Braun-Blanquet relevé approach and the US National Vegetation Classification approach. Students will be divided into sampling teams to sample vegetation in several habitats (dry, mesic, wet, riparian) along the Arctic climate gradient.

2-day presentation of student projects:

At the end of the course students will spend one day writing an oral presentation that summarizes their observations during the excursion. Students will present their findings on the second day with ample time for group discussions.

Research topics:

Students will develop a research topic that fits with the planned sampling approach. The topics should focus on descriptive aspects of vegetation along the climate gradient. Students should keep in mind that the analysis of the data will be limited by the short time available at the end of the course. (Data collected from the excursion will also be more thoroughly analyzed in the fall semester as part of BIOL 475 Vegetation Description and Analysis.) At the end of the course, each student will present 15-minute oral presentation summarizing an aspect of the field observations, focusing on their research topic. Guidelines for these presentations will be handed out at the beginning of

the course. Graduate students will also write a 10-15 page research paper focused on some aspect of observations during the course, which will be due at end of the summer.

7. Course Schedule and assignments:			
Day	Date	Topic	Assignment:
1	Jun 7	Morning: Arctic Vegetation overview lectures, Afternoon: Development of student research topics	
2	Jun 8	Morning: Arctic vegetation overview lectures. Afternoon: Preparation for field excursion.	
3	Jun 9	Drive to Coldfoot with stops at Tolvana River, Yukon River, Finger Mountain, U.S. Forest Service Fire Ecology research site at Mile 85.7 and Arctic Circle. Evening lecture at Coldfoot Multi-agency Visitor Center. Camp at Marion Creek.	Brown J, Kreig RA. 1983. Guidebook to permafrost and related features along the Elliot and Dalton highways, Fox to Prudhoe Bay, Alaska. Fairbanks, AK: Division of Geological and Geophysical Surveys. Walker DA, Hamilton TD, Ping C-L, Daanen RP, Streever WW. 2009. Dalton Highway Field Trip Guide for the Ninth International Conference on Permafrost. Fairbanks, AK: Division of Geological and Geophysical Surveys.
4	Jun 10	Drive to Galbraith Lake with stops at Sukakpak Mountain, Chandalar pingo, 3 stops on Atigun Pass (south side, summit, north side), Atigun River valley. Camp at Galbraith Lake.	Ellis JM, Calkin PE. 1979. Nature and distribution of glaciers, neoglacal moraines, and rock glaciers, east-central Brooks Range, Alaska. <i>Arctic and Alpine Research</i> 11: 403-420. Hamilton TD. 1986. Late Cenozoic glaciation of the Central Brooks Range. Pages 9-49 in Hamilton TD, Reed KM, Thorson RM, eds. <i>Glaciation in Alaska: the Geologic Record</i> . Anchorage: Alaska Geological Society.
5	Jun 11	Morning: vegetation sampling procedures. Relevé method. Afternoon: Visit to aufeis and Atigun canyon, dunes and riparian communities.	Schickhoff U, Walker MD, Walker DA. 2002. Riparian willow communities on the Arctic Slope of Alaska and their environmental relationships: A classification and ordination analysis. <i>Phytocoenologia</i> 32: 145-204.
6	Jun 12	Morning: Soil and site sampling procedures. Afternoon: Student sampling in wetlands and mesic sites in Galbraith Lake vicinity.	Ping CL, Michaelson GJ, Kimble JM, Romanovsky VE, Shur YL, Swanson DK, Walker DA. 2008. Cryogenesis and soil formation along a bioclimate gradient in Arctic North America. <i>Journal of Geophysical Research - Biogeosciences</i> 113: G03S12. Ping CL, Michaelson GJ, Jorgenson MT, Kimble JM, Epstein H, Romanovsky VE, Walker DA. 2008. High stocks of soil organic carbon in North American Arctic region. <i>Nature Geoscience</i> 1: 615-619.
7	Jun 13	Morning: Imnaviat Creek	Hamilton TD. 2003. Surficial geology of the Dalton

		<p>R4D research</p> <p>Afternoon: Toolik Lake, LTER research, and vegetation mapping</p> <p>Dinner at Toolik Lake Field Station:</p> <p>Possible stay at Toolik Lake Field Station or drive to Happy Valley and camp.</p>	<p>Highway (Itkillik-Sagavanirktok rivers) area, southern Arctic foothills, Alaska. 1 map sheet, 1:63,360 scale + 32 p text: Alaska Division of Geological and Geophysical Surveys, Professional Report 121.</p> <p>Raynolds MK, Walker DA, Munger CA, Vonlanthen CM, Kade AN. 2008. A map analysis of patterned-ground along a North American Arctic Transect. <i>Journal of Geophysical Research - Biogeosciences</i> 113: 1-18.</p> <p>Raynolds MK, Walker DA, Verbyla D, Munger CA. 2010. Changes in tundra vegetation over 25 years as measured by Landsat NDVI in the Upper Kuparuk River Basin, North Slope Alaska, 1985-2009. AGU Fall Meeting. San Francisco, CA.(or new change analysis paper)</p> <p>Walker MD, Walker DA, Auerbach NA. 1994. Plant communities of a tussock tundra landscape in the Brooks Range Foothills, Alaska. <i>Journal of Vegetation Science</i> 5: 843-866.</p> <p>Walker DA, Barry N. 1991. Toolik Lake permanent vegetation plots: site factors, soil physical and chemical properties, plant species cover, photographs, and soil descriptions. Boulder, CO: University of Colorado.</p> <p>Walker DA, Lederer ND, Walker MD. 1987. Permanent vegetation plots (Imnavait Creek): site factors, soil physical and chemical properties, and plant species cover. Boulder, CO: U.S. Department of Energy. Report no.</p>
8	Jun 14	<p>Morning: Happy Valley: Tussock tundra, riparian vegetation, water tracks, Sagavanirktok River floodplain. Biocomplexity research site.</p> <p>Afternoon: Sampling in Happy Valley vicinity. Camp along Sagavanirktok River at Happy Valley</p>	<p>Kade A, Walker DA, Raynolds MK. 2005. Plant communities and soils in cryoturbated tundra along a bioclimate gradient in the Low Arctic, Alaska. <i>Phytocoenologia</i> 35: 761-820.</p> <p>Kade A, Walker DA. 2008. Experimental alteration of vegetation on nonsorted circles: effects on cryogenic activity and implications for climate change in the Arctic. <i>Arctic, Antarctic, and Alpine Research</i> 40: 96-103.</p> <p>Walker DA, Auerbach NA, Nettleton TK, Gallant A, Murphy SM. 1997. Happy Valley Permanent Vegetation Plots. Boulder, CO: University of Colorado. Report.</p>
9	Jun 15	<p>Morning: Sagwon vicinity, northern foothills vegetation. Acidic and nonacidic tundra.</p> <p>Afternoon: Continuation of foothills vegetation sampling.</p> <p>Camp at Happy Valley.</p>	<p>Walker DA, Kuss HP, Epstein HE, Kade AN, Vonlanthen C, Raynolds MK, Daniëls FJA. 2011. Vegetation of zonal patterned-ground ecosystems along the North American Arctic Transect. <i>Applied Vegetation Science</i> 14: 435-606.</p> <p>Walker DA, et al. 1998. Energy and trace-gas fluxes across a soil pH boundary in the Arctic. <i>Nature</i> 394: 469-472.</p>
10	Jun 16	<p>Morning: Drive to Franklin Bluffs, Visit research sites.</p> <p>Afternoon: Coastal Plain vegetation sampling.</p>	<p>Walker DA, Bockheim JG, Chapin FS, III, Eugster W, Nelson FE, Ping CL. 2001. Calcium-rich tundra, wildlife, and "the Mammoth Steppe". <i>Quaternary Science Reviews</i> 20: 149-163.</p>

		Camp along Sagavanirktok River near Prudhoe Bay.	
11	Jun 17	Morning and afternoon: Hike to Percy Pingo. Pingo vegetation and flat coastal plain wetlands. Camp near Prudhoe Bay.	Walker MD. 1990. Vegetation and floristics of pingos, Central Arctic Coastal Plain, Alaska. Stuttgart, Germany: J. Cramer. Walker DA, Everett KR. 1991. Loess ecosystems of northern Alaska: regional gradient and toposequence at Prudhoe Bay. Ecological Monographs 61: 437-464.
12	Jun 18	Return to Fairbanks, stopping where necessary for student projects.	
13	Jun 19	Students prepare oral presentations summarizing field observations	
14	Jun 20	Student oral presentations	Graduate student papers due Aug 15.

8. Course policies:

Academic integrity:

Plagiarism and cheating will not be tolerated. Plagiarism is presenting another's work as new or original without citing your source. For additional detail, see <http://www.uaf.edu/library/instruction/handouts/Plagiarism.html>

Please speak with me if you have any questions about how to properly use other people's work.

Attendance policy:

Students are expected to actively participate in both the academic part and expedition part of camp, cooking, clean-up, waste management, emergencies, group decisions, and keeping a cheerful attitude in sometimes trying circumstances.

9. Evaluation:

Summary of grading points:

Undergraduate student grading (BIOL 462 students):

Attendance and participation in discussions:	200 pts
Relevé data sheets and data entry	200
Oral presentation of research topic	<u>200</u>
TOTAL	600 pts

Graduate student grading (BIOL 662 students):

Attendance and participation in discussions:	200 pts
Relevé data sheets and data entry	200
Oral presentation of research topic	200
Final research paper	<u>200</u>
TOTAL	800 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.

Graduate student grading:

Graduate students will be graded according to the same criteria as the graduate students except that the graduate students are required to turn in 10-15 page research paper on an Arctic Vegetation topic of their choice by Aug 15. This paper will be worth 25% of the total grade.

10. Support Services:

Students are encouraged to contact the instructor with any questions, or to clarify the lecture or the assignments. I will be happy to review drafts of assignments and answer questions any time. Arctic Health, Room 254. Phone 474-2460, dawalker@alaska.edu. Home phone: 451-0800.

11. Disabilities services:

The instructor will work with the Office of Disabilities Services (203 WHIT, 474 7043, to provide reasonable accommodation to students with disabilities.