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FORMAT 1

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	Jeff Baxter	Phone	474-6294
Email Contact	jbaxter2@alaska.edu	Faculty Contact	Knut Kielland

1. ACTION DESIRED (CHECK ONE): Trial Course [ ] New Course [XX]

2. COURSE IDENTIFICATION: Dept [BIOL] Course # [F4XX] No. of Credits [3]

Justify upper/lower division status & number of credits: **Course will cover advanced topics in ecology and environmental science which will require basic knowledge of physics, chemistry and biology, including a firm understanding of ecological principles. Course credit load (3 credits) in based on two 1-hr lectures and one 3-hr lab per week**

3. PROPOSED COURSE TITLE: **Winter Ecology**

4. To be CROSS LISTED? *YES/NO* [No] If yes, Dept: [ ] Course # [ ]

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

5. To be STACKED? *YES/NO* [No] If yes, Dept. [ ] Course # [ ]

Stacked course applications are reviewed by the (Undergraduate) Curricular Review Committee and by the Graduate Academic and Advising Committee. Creating two different syllabi—undergraduate and graduate versions—will help emphasize the different qualities of what are supposed to be two different courses. The committees will determine: 1) whether the two versions are sufficiently different (i.e. is there undergraduate and graduate level content being offered); 2) are undergraduates being overtaxed?; 3) are graduate students being undertaxed? In this context, the committees are looking out for the interests of the students taking the course. Typically, if either committee has qualms, they both do. More info online - see URL at top of this page.

6. FREQUENCY OF OFFERING: **Fall**

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

7. SEMESTER & YEAR OF FIRST OFFERING (AY2013-14 if approved by 3/1/2013; otherwise AY2014-15) **Fall 2013 (was offered as a special topics course in Fall 2012)**

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)	[ ] *1*	[ ] *2*	[ ] *3*	[ ] *4*	[ ] *5*	[X] *6 weeks to full semester*
OTHER FORMAT (specify)						
Mode of delivery (specify lecture, field trips, labs, etc)	**Lecture and lab**					

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9. CONTACT HOURS PER WEEK:	2	LECTURE hours/weeks	3	LAB hours /week		PRACTICUM hours /week

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)	

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

Example of a complete description:

FISH F487 W, O Fisheries Management
3 Credits Offered Spring
Theory and practice of fisheries management, with an emphasis on strategies utilized for the management of freshwater and marine fisheries. *Prerequisites: COMM F131X or COMM F141X; ENGL F111X; ENGL F211X or ENGL F213X; ENGL F414; FISH F425; or permission of instructor.* Cross-listed with NRM F487. (3+0)

BIOL F4XX Winter Ecology
3 credits Offered Fall
Focus on morphological, physiological and behavioral responses of animals and plants to winter conditions. Strategies of avoidance and tolerance of cold temperatures and low resources will be discussed. Analysis of physical and biological processes in seasonally snow covered ecosystems. Includes principles of radiation and heat exchange, physics and chemistry of snow, thermoregulatory strategies in animals, and discussion of how winter affects trophic dynamics and population processes.
Prerequisites: BIOL F371 (formerly BIOL F271) Principles of Ecology or permission of instructor. (2+3)

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:**	

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

O = Oral Intensive, Format 6		W = Writing Intensive, Format 7		Natural Science, ("X" for Core) Format 8	

11.A *Is course content related to northern, arctic or circumpolar studies? If yes, a "snowflake" symbol will be added in the printed Catalog, and flagged in Banner.*

YES		NO	

12. *COURSE REPEATABILITY:*

Is this course repeatable for credit?	**YES**		**NO**	XX

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?		**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:	XX	**PASS/FAIL:**	

RESTRICTIONS ON ENROLLMENT (if any)

14. PREREQUISITES — **BIOL F371 (formerly BIOL F271), Principles of Ecology**

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

15. SPECIAL RESTRICTIONS, CONDITIONS — **Maximum class size, 12 students**

16. PROPOSED COURSE FEES — **$0**

Has a memo been submitted through your dean to the Provost for fee approval? **Yes/No**

17. PREVIOUS HISTORY

Has the course been offered as special topics or trial course previously? **Yes/No** — **Yes**

If yes, give semester, year, course #, etc.: — Fall 2012, BIOL F493

18. ESTIMATED IMPACT

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

None

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 [ ] Yes [X]

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.

No course currently offered by the Department of Biology & Wildlife at UAF focuses on the unique challenges of winter conditions for plants and animals. In the past one such course addressed some of these challenges; BIOL F422 (Physiological Ecology of Overwintering). However, the instructor for this course has had his workload directed elsewhere (for administration) so the course has not been offered the last few years, nor is it likely to be resurrected. The proposed course (BIOL F4XX Winter Ecology), will include many of the topics covered in BIOL F422. However, the new course will include a fuller discussion of the climate system of snow covered ecosystems, a more in-depth treatment of environmental energy exchange as well as a section on the physics and chemistry of snow, and greater emphasis on the ecology of winter-active animals. The latter will comprise in-depth discussions of physiological ecology, population ecology and trophic dynamics. I expect this course content will appeal to biology & wildlife students and that it

~~trophic dynamics. I expect this course content will appeal to biology & wildlife students and that it.~~ represents an appropriate class to be offered at UAF.

APPROVALS:

Signature, Chair, Department of:Biology and Wildlife	**Christa Mulder**	Date Feb 26, 2013
Signature, Chair, College Curriculum Council for: College of Natural Science and Mathematics	**Leah Berman**	Date Mar 1, 2013
Signature, Dean, College of: Natural Science and Mathematics	**Paul Layer**	Date 3/5/13
Signature of Provost (if applicable)		Date

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 REGISTRAR'S OFFICE.

ADDITIONAL SIGNATURES: **(If required)**

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

ATTACH COMPLETE SYLLABUS (as part of this application). The guidelines are online: http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/uaf-syllabus-requirements/
The Faculty Senate curriculum committees will review the syllabus to ensure that each of the items listed below are included. If items are missing or unclear, the proposed course (or changes to it) may be denied.

SYLLABUS CHECKLIST FOR ALL UAF COURSES

During the first week of class, instructors will distribute a course syllabus. Although modifications may be made throughout the semester, this document will contain the following information (as applicable to the discipline):

1. **Course information:**
   ❑Title, ❑ number, ❑credits, ❑prerequisites, ❑ location, ❑ meeting time (make sure that contact hours are in line with credits).
2. **Instructor (and if applicable, Teaching Assistant) information:**
   ❑ Name, ❑ office location, ❑ office hours, ❑ telephone, ❑ email address.
3. **Course readings/materials:**
   ❑ Course textbook title, ❑ author, ❑ edition/publisher.
   ❑ Supplementary readings (indicate whether ❑ required or ❑ recommended) and
   ❑ any supplies required.
4. **Course description:**
   ❑ Content of the course and how it fits into the broader curriculum;
   ❑ Expected proficiencies required to undertake the course, if applicable.
   ❑ Inclusion of catalog description is *strongly* recommended, and
   ❑ Description in syllabus must be consistent with catalog course description.
5. ❑ **Course Goals (general), and (see #6)**
6. ❑ **Student Learning Outcomes (more specific)**
7. **Instructional methods:**
   ❑ Describe the teaching techniques (eg: lecture, case study, small group discussion, private instruction, studio instruction, values clarification, games, journal writing, use of Blackboard, audio/video conferencing, etc.).
8. **Course calendar:**
   ❑ A schedule of class topics and assignments must be included. Be specific so that it is clear that the instructor has thought this through and will not be making it up on the fly (e.g. it is not adequate to say "lab". Instead, give each lab a title that describes its content). You may call the outline Tentative or Work in Progress to allow for modifications during the semester.
9. **Course policies:**
   ❑ Specify course rules, including your policies on attendance, tardiness, class participation, make-up exams, and plagiarism/academic integrity.
10. **Evaluation:**
    ❑ Specify how students will be evaluated, ❑ what factors will be included, ❑ their relative value, and ❑ how they will be tabulated into grades (on a curve, absolute scores, etc.) ❑ Publicize UAF regulations with regard to the grades of "C" and below as applicable to this course. (Not required in the syllabus, but may be a convenient way to publicize this.) Faculty Senate Meeting #171: http://www.uaf.edu/uafgov/faculty-senate/meetings/2010-2011-meetings/#171
11. **Support Services:**
    ❑ Describe the student support services such as tutoring (local and/or regional) appropriate for the course.
12. **Disabilities Services:** Note that the phone# and location have been **updated.** The Office of Disability Services implements the Americans with Disabilities Act (ADA), and ensures that UAF students have equal access to the campus and course materials.
    ❑ State that you will work with the Office of Disabilities Services (208 WHITAKER BLDG, 474-5655)to provide reasonable accommodation to students with disabilities.

BIOLOGY F4XX, Fall
Winter Ecology

Meets	Lecture MW 1 – 2 Irving 208 Labs: Tues 2 – 5 Irv 208
Instructor	Knut Kielland, Assoc. Prof. (Ecology) Email: kkielland@alaska.edu Phone: 474-7164 Office hours: M 2 - 3 or by appointment in 406 Irving
TAs	TBA
Prerequisites	BIOL 271
Recommended	PHYS 103X or PHYS 115X
Text	Marchand, J.P., Life In The Cold: An Introduction to Winter Ecology. 3rd edition. University Press of New England.
Description	This course focuses on morphological, physiological and behavioral responses of animals and plants to winter conditions. Strategies of avoidance and tolerance of cold temperatures and low resources will be discussed. Analysis of physical and biological processes in seasonally snow covered ecosystems. Includes principles of radiation and heat exchange, physics and chemistry of snow, thermoregulatory strategies in animals, and discussion of how winter affects trophic dynamics and population processes.
Attendance	Class attendance is expected. In lectures I provide material beyond what is covered in the textbook. The lecture hour also provides an opportunity for announcements about upcoming labs.
Objectives	Upon successful completion of the course, students will have a thorough understanding of major adaptations of plants and animals to winter conditions in boreal and arctic Alaska, as well as the physical and ecological processes of characterizing snow covered ecosystems. Lab exercises will provide hands-on experience examining topics covered in lecture and reading.
Websites	The course website is administered through Blackboard at http://classes.uaf.edu. Check the website for announcements and to obtain copies of handouts and assignments. Grades will be posted on Blackboard. When you enrolled in the course, you were automatically registered on the course website. To log on, enter your UAF username (the first part of your UAF email address) and your Blackboard password. If you have forgotten your password, follow the instructions on the Blackboard home page. (Note that your Blackboard password is not necessarily the same as your UAF email

password.) If you have never logged on to Blackboard before, your password should be your student ID number followed by a capital U (e.g. 366888888U).

Assessment

Exam #1	100 pts
Exam #2	100 pts
Final	200 pts
Lab	130 pts
Total	530 pts

Grading

Grades will be assigned based on the percentage of points you earn in class. Grades will not be assigned on a curve. No extra credit assignments are available.

Grade	% of Total Points
A	90 – 100
B	80 – 89
C	70 – 79
D	60 – 69
F	0 – 59

Exams

Exams emphasize reasoning, problem-solving, and clarity of expression. The format will include short-answer and essays. The final exam will emphasize material presented since the last exam, but will also incorporate material from the entire course.

Missing exams

If you need to miss an exam for a scheduled activity (e.g. sports event), you must schedule a makeup at least one week before the exam. If you are ill on the day of the exam, you must: a) contact the instructor by email or phone before the exam begins, b) take a makeup exam within 48 hours, or c) bring a note from a medical professional explaining your absence to the makeup exam. If you miss the first exam and do not take a makeup within 2 days, you will be administratively dropped from the class.

Labs

The labs are designed to illustrate and supplement lecture material and to introduce students to a variety of environments, tools, and empirical approaches. The labs include field exercises and indoor activities. We will be spending several labs tromping in the woods. If you have a disability which prevents you from doing so, please discuss it with me before signing up for the class. Please dress appropriately when we go outdoors. Outdoor labs will be conducted unless the temperature is below –40°F. All lab assessments will be weighted equally. Laboratory assessments include question sets and laboratory reports.

Academic dishonesty

Acts of academic dishonesty include cheating on exams, helping others to cheat, plagiarizing, feigning illness to obtain an extension, and turning in work that was written for another class without permission. Please read the UAF Student Code of Conduct in the UAF Catalog. Students who behave

dishonestly will receive an F for the class and the case will be presented to the University Disciplinary and Honor Code Committee for review. Students are encouraged to work groups on lab exercises, but unless otherwise specified, each student must turn in his or her own written assignment.

Disabilities Students with disabilities are encouraged to inform the instructor in the first 2 weeks of class so accommodations can be made. Please do not wait until after an exam to make me aware of the issue. If you suspect that you qualify for assistance, contact UAF's Disability Services (474-5655, TTY x1827,or by email at uaf-disabilityservices@alaska.edu,). If you do not have a documented learning disability but feel that time pressure or cramped quarters has a negative effect on your exam performance, please discuss this with the instructor.

The lecture schedule is not set in concrete. We will adhere to it sufficiently to give the class structure, and depart from it as our discussions may wander into mutually interesting terrain.

Lecture schedule Fall 2012

Date	Day	Topic	Lect. #	Lecture
5-Sep	W	Section I	1	Introduction
10-Sep	M	*Environmental*	2	Alaska's climate
12-Sep	W	*considerations*	3	Snow cover & the Climate System
17-Sep	M		4	Energy exchange I
19-Sep	W		5	Energy exchange II
24-Sep	M		6	Snow pack dynamics
26-Sep	W		7	Snow physics
1-Oct	M		8	Snow chemistry
3-Oct	W			Exam #1
8-Oct	M	Section II	9	The subnivian space
10-Oct	W	*Life beneath*	10	Shoulder season challenges
15-Oct	M	*the snow pack*	11	Microbial ecology under snow
17-Oct	W		12	Snow-vegetation interactions
22-Oct	M		13	Insects in winter
24-Oct	W		14	Small mammals in winter
29-Oct	M		15	Hibernation strategies
31-Oct	W		16	Lights out & circadian rhythms
5-Nov	M			Exam #2
7-Nov	W	Section III	17	Winter regime of rivers and lakes
12-Nov	M	*Life above the*	18	Plant-animal interactions
14-Nov	W	*snow pack*	19	Activity patterns
19-Nov	M		20	Metabolic adaptations
21-Nov	W		21	Insulation
26-Nov	M		22	The chickadee marvel

Nov-12	W	23	Herbivore magic
3-Dec	M	24	Population dynamics
5-Dec	W	25	Predator-prey relations
10-Dec	M	26	Evolutionary perspectives
12-Dec	W		Final Exam

Lab schedule
Fall 2012

Date	Lab #	Lab	Inside/Outside
11-Sep	1	Bonanza Creek (Hare trapping)	Out
18-Sep	2	Browse production	Out
25-Sep	3	Heat flux set-up (UAF Arboretum)	In/Out
2-Oct	4	Tanana River	Out
9-Oct	5	LARS	Out
16-Oct	6	Soils lab	Out
23-Oct	7	Winter birds	Out
30-Oct	8	Ground squirrels	In
6-Nov	9	Bonanza Creek (Tracks)	Out
13-Nov	10	Bears	In
20-Nov	11	Heat flux data analysis	Out/In
27-Nov	12	Browse offtake	Out
4-Dec	13	Climate change	In