

**FORMAT 2**

Submit originals (including syllabus) and one copy and electronic copy to the **Faculty Senate Office**  
 See <http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures/> for a complete description of the rules governing curriculum & course changes.

**CHANGE COURSE (MAJOR) and DROP COURSE PROPOSAL**

*Attach a syllabus, except if dropping a course.*

<b>SUBMITTED BY:</b>					
Department	Biology & Wildlife	College/ School	CNSM		
Prepared by	Sasha Kitaysky	Phone	474-5179		
Email Contact	askitaysky@alaska.edu	Faculty Contact	Alexander (Sasha) Kitaysky		
<b>1. COURSE IDENTIFICATION: As the course now exists.</b>					
Dept	BIOL	Course #	F441 W,O.2	No. of Credits	3
COURSE TITLE					Animal Behavior
<b>2. ACTION DESIRED: Changes to be made to the existing course.</b>					
CHANGE COURSE					x
DROP COURSE					
NUMBER					
TITLE					
DESCRIPTION					x
PREREQUISITES					x
FREQUENCY OF OFFERING					
CREDITS (including credit distribution)					
COURSE CLASSIFICATION					
CROSS LISTED					
Dept. (Requires approval of both departments and deans involved. Add lines at end of form for such signatures.)					
STACKED (400/600) Include syllabi.				<b>RECEIVED</b>	
Dept. and Course #					
OTHER (please specify)				SEP 20 2012	
				Dean's Office	
College of Natural Science & Mathematics					

**3. 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 and the appropriate Faculty Senate curriculum committee. Furthermore, any core course compressed to less than six weeks must be approved by the core review committee.

Governance  
 10/3/12 TUP

Leah Berman  
 9/21/12 TUP

<b>COURSE FORMAT:</b> (check <b>all</b> that apply)	1	2	3	4	5		<i>6 weeks to full semester</i>
OTHER FORMAT (specify all that apply)							
Mode of delivery (specify lecture, field trips, labs, etc)							

**4. COURSE CLASSIFICATIONS:** (undergraduate courses only. Use approved criteria found on Page 10 & 17 of the manual. If justification is needed, attach on separate sheet.)

H = Humanities	S = Social Sciences			
Will this course be used to fulfill a requirement for the baccalaureate core?		YES <input checked="" type="checkbox"/>	NO	
IF YES, check which core requirements it could be used to fulfill:				
O = Oral Intensive, Format 6 also submitted	x	W = Writing Intensive, Format 7 submitted	x	Natural Science, Format 8 submitted

**5. 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?				<b>TIMES</b>
If the course can be repeated with variable credit, what is the maximum number of credit hours that may be earned for this course?				<b>CREDITS</b>

**6. CURRENT CATALOG DESCRIPTION AS IT APPEARS IN THE CATALOG: including dept., number, title and credits**

**BIOL F441 W,O/2      Animal Behavior (n)**  
**3 Credits**                      Offered Fall

Genetic and physiological bases of behavior, evolutionary and ecological principles of individual and social behavior, sociobiology and techniques of behavioral observation and analysis. **Prerequisites: BIOL F271; BIOL F310; COMM F131X or COMM F141X; ENGL F111X; ENGL F211X or ENGL F213X; or permission of instructor. (2+3)**

**7. COMPLETE CATALOG DESCRIPTION AS IT WILL APPEAR WITH THESE CHANGES:**  
**(Underline new wording strike-through old wording and use complete catalog format including dept., number, title, credits and cross-listed and stacked.) PLEASE SUBMIT**

**7. COMPLETE CATALOG DESCRIPTION AS IT WILL APPEAR WITH THESE CHANGES:**  
*(Underline new wording ~~strike through old wording~~ and use complete catalog format including dept., number, title, credits and cross-listed and stacked.)*

**BIOL F441 W,O/2      Animal Behavior ~~(n)~~**  
**3 Credits                      Offered Fall**  
 Genetic and physiological bases of behavior, evolutionary and ecological principles of individual and social behavior, sociobiology and techniques of behavioral observation and analysis. ~~**Prerequisites: BIOL F271; BIOL F310; COMM F131X or COMM F141X; ENGL F111X; ENGL F211X or ENGL F213X; or permission of instructor. (2+3)**~~  
Evolutionary and ecological principles of individual and social behavior, genetic and physiological bases of behavior, techniques of behavioral observation, experimental manipulation and analysis. Design and implementation of independent research project on live animals. This course satisfies capstone project degree requirements in the Biological Sciences. Special fees apply. Prerequisites: STAT F200X; BIOL F310; COMM F131X or COMM F141X; ENGL F111X; ENGL F211X or ENGL F213X; Co-requisite: BIOL F481; or permission of instructor. (2+2+1)

**8. IS THIS COURSE CURRENTLY CROSS-LISTED?**

YES/NO	No	If Yes, DEPT	NUMBER

(Requires written notification of each department and dean involved. Attach a copy of written notification.)

**9. GRADING SYSTEM: Specify only one.**

LETTER:  PASS/FAIL:

**10. ESTIMATED IMPACT**

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

No impacts on budget, facilities, or space anticipated.

**11. 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  **No need to change library resources**

**12. 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)*

The change will impact only students majoring in Biological Sciences, as STAT 200X is already required of BIOL majors.

**13. POSITIVE AND NEGATIVE IMPACTS**

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

Dropping Principles of Ecology (BIOL 271) might reduce demand for that class.


**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. If you ask for a change in # of credits, explain why; are you increasing the amount of material covered in the class? If you drop a prerequisite, is it because the material is covered elsewhere? If course is changing to stacked (400/600), explain higher level of effort and performance required on part of students earning graduate credit. Use as much space as needed to fully justify the proposed change and explain what has been done to ensure that the quality of the course is not compromised as a result.

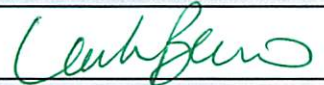
This decision to designate this course as "capstone" for biological sciences majors is part of a larger set of revision to the Biological Sciences B.A. and B.S. curricula. Both degrees will now require students to complete a capstone project for graduation. The capstone project is a research project that must be chosen and completed by the student and presented in written form. BIOL 441 will become one of several courses that satisfy the capstone requirement. The course already requires a research project to be proposed, conducted, and written up by the student, so there will be minimal changes to course delivery. The revised catalog description will help student to identify courses that meet the capstone requirement.

Prerequisite changes include dropping BIOL 271 and adding BIOL 481 and STAT 200x. BIOL 271 used to be required of all biological sciences majors but will not be so required under the revised curriculum. A basic knowledge of ecology such as students gain in the Fundamentals of Biology (BIOL 116x, a prerequisite for BIOL 310) will be sufficient for success in Animal Behavior. However, Animal Behavior is taught from an evolutionary perspective, so BIOL 481, Principles of Evolution, has been added as a co- or pre-requisite. STAT F200X has been added because students will need to apply basic statistical principles to their class projects.

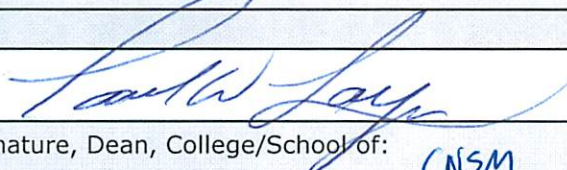
**APPROVALS: (Additional signature blocks may be added as necessary.)**

	Date
Signature, Chair, Program/Department of: <i>Biology and Wildlife</i>	

*Sept 20, 2012*

	Date
Signature, Chair, College/School Curriculum Council for: <i>CNSM</i>	

*9/26/2012*

	Date
Signature, Dean, College/School of: <i>CNSM</i>	

*Oct 1, 2012*

Signature of Provost (if applicable)	Date
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**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.**

Signature, Chair, UAF Faculty Senate Curriculum Review Committee	Date
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**ADDITIONAL SIGNATURES: (As needed for cross-listing and/or stacking)**

Signature, Chair, Program/Department of:	Date
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Signature, Chair, College/School Curriculum Council for:	Date
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Signature, Dean, College/School of:	Date
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BIO 441  
Fall 201X  
General Course Information

Animal Behavior

Instructor: Alexander Kitaysky  
Office: 413, Irving 1  
Phone: 474-5179  
Email: [askitaysky@alaska.edu](mailto:askitaysky@alaska.edu)  
Office hours: by appointment

TA: Rebecca Young  
Office: Irving 1, Room 102  
Phone: 474-5753 (lab)  
Email: [rcyoung@alaska.edu](mailto:rcyoung@alaska.edu)  
Office hours: Wednesdays 11:30 – 1pm and by appointment

Lecture meeting schedule: Mon, Wed 10:30-11:30, 103 Irving I

Lab meeting schedule: Mon 14:15-17:15 409 Bunnell

***This course satisfies capstone project degree requirements in the Biological Sciences.***

Course goal, objectives and description: Animal Behavior is the study of what animals do. The overall goal of this course is to teach you how to use scientific method to study animal behavior. The course focuses on the evolutionary approach – specifically, we'll learn ***how*** animals behave (i.e., the proximate, or mechanistic perspective) and ***why*** they behave in a certain way (i.e., the ultimate, or evolutionary perspective). Emphasis of the lecture section will be on general concepts, and during the lab section you will learn how to use these concepts in conducting research in the field of animal behavior. Most of written assignments will be assigned as part of the lab section. By the end of the course you will be able to (A) read and critically evaluate primary literature, (B) design and conduct observational and experimental studies, (C) write and present a scientific report.

The course will start with a review of the scientific method. Then, we will focus on the proximate and ultimate causation in behavior as a foundation for the rest of the course. We'll then move on to the key principles in behavioral research: (1) the interrelated roles of genetics and environment in the development of behavior, (2) the roles of the nervous system in direct control of behavior, and (3) the effects of hormones on behavior. This will take us about half of the way through the course. In the second half of the course we'll use these general principles to study resource acquisition, defense and use. Specifically, we will study the anti-predatory, foraging, and reproductive behaviors, principles of the sexual selection, and diversity of social systems. During the second half of this oral-intensive course, each student will present a published study on a given subject and lead the discussion of that paper by all students in the class. The course is comparative, and therefore material from a variety of animal taxa will be used to reveal general principles of behavior as well as to illustrate specific behavioral adaptations to particular environments.

Lectures: Lectures may use a variety of media, including computer projection, chalkboard, and video clips. Note that a substantial amount of what happens in class will not be amenable to being placed on the website (see below), so don't expect to be able to use notes posted to the website as a replacement for missed lectures. Note also that the exams will emphasize (but not be limited to) material covered in lectures.

Readings: Assigned readings from primary literature provide background and context for lectures and will cover *some* of the same specific examples that will be used in lectures. Consequently it will help if you do the reading prior to the lectures. Material in the assigned text readings that isn't covered in lecture

*will* be fair game for exam questions, but as noted above you can expect the vast majority of exam material to be from what is covered in lecture.

### **TEXTS:**

**Recommended:** Alcock, J. *Animal Behavior*, 8th ed., Sinauer.

**Optional:** Martin, P. and P. Bateson. 2000. *Measuring behaviour*. Cambridge University Press.

### **BEHAVIORAL JOURNALS (Primary literature sources)**

Below are lists of scientific journals that publish research articles and reviews in animal behavior. The first list includes the behavior-specific journals and the second list includes those journals that are not specifically behavioral in scope but do publish behavioral articles from time to time.

**Primary journals in Animal Behavior:** *Animal Behaviour*, *Behavioral Ecology*, *Behaviour*, *Behavioural Ecology and Sociobiology*, *Ethology*, *Evolution and Human Behavior* (previously *Ethology and Sociobiology* until 1997), *Hormones and Behavior*.

**Secondary journals in Animal Behavior:** More general journals that frequently publish articles in animal behavior.

*American Naturalist*, *Animal Ecology*, *Biology of Reproduction*, *Biology Letters*, *Ecology*, *Proceedings of the Royal Society B* *London Functional Ecology*, *Journal of Comparative Physiology*, *Journal of Experimental Zoology*, *Nature*, *Science*.

### **Style guides (a sampling):**

Strunk, W., Jr., and E. B. White. 1979. *The elements of style*, third ed., MacMillan.

Council of Biology Editors. 1994. *Scientific style and format: the CBE manual for authors, editors, and publishers* (6th ed.), Cambridge Univ. Press.

Day, R. A. 1995. *How to write and publish a scientific paper* (4th ed.). Cambridge Univ. Press.

Pechenik, J. A. 1993. *A short guide to writing about biology*. Harper Collins.

Supplemental texts or other readings may be placed on the Blackboard.

**Blackboard information:** We will make use of Blackboard to get information to you regarding homework assignments, scheduling review sessions, modifications to regular office hours, etc. Lecture notes, lab notes, and old exams will be placed on Blackboard. Please make certain you have access to the Biol 441 Blackboard site. Please check it frequently to be sure you don't miss something important. You can get access to the website through:

<http://classes.uaf.edu>

By now, you should be able to obtain this document (General Course Information) and the syllabus with projected lecture and reading schedules from it right away. Lecture outlines will also be posted to the Blackboard, but generally not until after a given lecture. As noted above, these will not be so detailed as to be useful as replacements for missed lectures.

## Tentative COURSE GRADING

You will be evaluated on the basis of your performance on three exams (2 midterms and a final), in the lab section of the course, and participation in class.

Midterm 1: Covers **PART 1** of the course

Midterm 2: Covers **PART 2** of the course

Final exam: Focus primarily on the specific **STUDIES PRESENTED BY EACH STUDENT IN CLASS**, but will also include basic principles of the entire course

Contribution of each part of the course to your final grade will be as follows:

<u>Lecture section</u>	
Exam 1:	10%
Exam 2:	15%
Final exam:	20%
<u>Lab section:</u>	45%
<u>Class participation:</u>	10%

### Notes

The course is written and oral intensive, your attendance of lectures and lab sessions is mandatory.

Make-up exams will be allowed **ONLY** for an excused absence with my approval (I will need official verification of illness or family emergency) and they will be given in a different format.

Exams will test factual knowledge as well as an ability to synthesize and integrate information. The exams will consist of short answers (one to a few sentences). Examples of each exam (questions with answers) will be handed out before the midterms and final. Midterm II and Final will not be comprehensive, but could include questions from previous examination(s).

Class participation - your questions and comments are appreciated in lectures and labs. There will be short formal discussions (lead by instructors and students) in several lecture and lab periods. You should prepare (e.g. write down) any questions you have while doing the assigned readings, and see that your questions are addressed in class.

If you would like to request academic accommodations due to a disability, please contact Disabled Student Services, 474-7043. If you have a letter from Disabled Student Services indicating you have a disability that requires academic accommodations, please present the letter to us so we can discuss the accommodations you might need for class.

UAF Honor Code – everybody should be in good standing

**Grading:** Final grades will be assigned based on percentages of total points earned:

**90-100% = A; 80-89% = B; 70-79% = C; 60-69% = D; F<60%.** At their discretion, the instructors may reduce one or more of these percentages when assigning final grades.



## General

- Goals: To learn (A) General: how research is conducted in the field of animal behavior. (B) Specific: How to design, conduct and present your own study on a topic in animal behavior. Rather than learn from ‘canned’ labs, you will conduct studies that YOU’VE designed, and learn how to analyze and present the data in both oral and written formats. This class is a writing/oral-intensive class, which means that most of your graded work will be written and presented. You will have the opportunity to revise drafts and improve most of your writing assignments. Scientific writing and presentation can be difficult and time-consuming, but the ability to write good scientific papers and effectively communicate results is essential for a biologist. By the end of this semester, you should be able to both conduct research of your own, and to intelligently critique any other studies or papers you come across. You will get as much feedback on drafts of papers as you care to ask for – we are much more interested in seeing writing improvement than in taking off points.
- All animals, vertebrate and invertebrate, must be treated with care and respect. Furthermore, may be required to enroll in and complete the online University IACUC (Institutional Animal Care and Use Committee) module.

<b><i>STUDENT RESPONSIBILITIES</i></b>	<b><i>Early-semester: intro</i></b>	<b><i>Mid-semester: practice</i></b>	<b><i>Late-semester: demonstration of expertise</i></b>
Intensive Writing	Lab reports	Group paper	Proposal of final project
Intensive Speaking	Presentations of group project	Presentations of papers (lecture section)	Presentation of final project

## Assignments

- Late assignments: 10% of the points will be docked for every day an assignment is late, and you will get no credit if it is not in by the Friday after it is due. Let me know if you have extenuating circumstances-- please talk to me by the Friday before the due date.
- ALL ASSIGNMENTS:
  - Will be submitted in one (1) document – either a .doc, .docx, or .pdf.
  - Name of the document will begin with the student's surname, first initial, and an underscore (e.g. YoungR\_lab report1.doc)
  - Must be typed (Times New Roman - 12pt font OR Calibri – 11pt font, double-spaced). Spelling and grammar are important, and some points will usually be dedicated to organization and clarity.
  - Always due at the beginning of the following lab, unless otherwise indicated.
  - Emailing assignments to your TA ([rcyoung@alaska.edu](mailto:rcyoung@alaska.edu) ← use this email address!) is the preferable way to turn things in, as long as they are on time (**Before lab!**)
- LAB REPORTS
  - Lab reports will follow the scientific method. Sections will be as follows:
    - Introduction: why are we doing this project? What questions are we addressing?
    - Methods: What exactly did we do
    - Results: What did we find. This is the place to embed graphs you may have made.
    - Discussion: Re-address the questions from the introduction with the information you've learned from our time in lab.
    - Questions: There will be questions laid out in the lab handout. Please number these as they are numbered in the lab handout and answer them fully (1-2 good sentences).

## Grading

Although your lab grade will be integrated into your lecture grade, we will score it out of 100 possible points.

- 10% Participation (on time? carrying your weight? contributing ideas?)
- 20% Betta fish paper (group project: group paper)
- 12% Independent project proposal presentation
- 20% Independent project poster
- 13% Independent project poster presentation
  - NOTE: THERE IS NO FINAL PAPER ASSOCIATED WITH THE FINAL PROJECT. YOUR PROPOSAL AND IACUC MODIFICATION ARE THE WRITTEN COMPONENTS OF THIS ASSIGNMENT.
- 25% Other assignments (paper reviews, drafts etc)

Note that papers and presentations are worth a lot, but you should have plenty of time to revise and get enough feedback to perfect the final product! USE YOUR TA (in a nice way, please). I will comment on drafts as long as I get them by the Wednesday prior to the lab in which they are due.

- For most assignments, I will provide a general outline of how the points are allocated. Look carefully at these! Sometimes things that might seem trivial (like including references) can be very heavily weighted.
- The “do your own work” policy that you usually hear about applies here, but it’s tricky because you will be working closely with your group members and handing in group assignments. However, *people in the same group may receive different grades if it is clearly established that some did more work than others*. To help keep track, other group members will evaluate your contribution to the project and you will be asked to submit a report, recording what you did and how much time you spent. I will check in periodically to make sure everyone feels that the work is distributed evenly across group members. Please make an appointment to talk to me if you have concerns about group dynamics.
- Absences: It is a bad idea to miss lab. Don’t do it if you can help it, and talk to me **first** if you can’t help it. You may not be able to make up assignments missed because you did not attend lab.

## LAB SCHEDULE

### Week 1 (Sept 10): Introduction to Animal Behavior

*Due – nothing!*

*Assignment – Find 2 betta papers to discuss with group*

### Week 2 (Sept 17): Creamer's Field

- Reading literature
- Collecting animal behavior data
  - Field Observations: group size and vigilance
  - Analyze data

*Due – 2 betta papers*

*Assignment – Creamer's Lab Report*

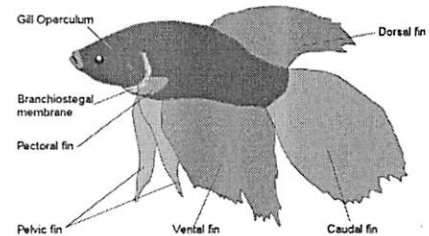
### Week 3 (Sept 24): Betta Observation Lab

- Betta observations (ethogram) & potential questions

- Paper (primary literature you found earlier) discussions in groups
- Review of previous BIO441 projects
- Define study question

*Due – Creamer's Lab Report*

*Assignment – Betta Lab Report; 1-2 p. proposal with DETAILED methods and timeline*



### Week 4 (Oct 1): Group Betta Experiment \*(no regular lab meeting)\*

- test feasibility, hardware
- collect pilot data
- reassess questions
- collect more data

*Due – Betta Lab Report; Group Proposal*

*Assignment – Draft of introduction and methods*

### Week 5 (Oct 8): Betta Data Lab: Stats, figures and presentation

- Work up data on computers

*Due – Draft of intro & methods*

*Assignment – Draft of results and discussion*

### Week 6 (Oct 15): Optimal foraging lab

- Assess effectiveness of different foraging strategies in humans

*Due – Draft of results & discussion*

*Assignment – Final draft of Betta paper; Optimal foraging lab report*

### Week 7 (Oct 22): Individual project development

- assess local resources
- assess literature
- review elements of experimental design

*Due – Final Group Betta Paper; Optimal foraging lab report*

*Assignment – Project Development Worksheet (including 3 refs); IACUC Application*

**Week 8 (Oct 29): Independent project proposal presentations (Part 1)**

- Present your project to lab
- Provide constructive written feedback to labmates

*Due – Project Development Worksheet; IACUC Application*

*Assignment – Proposal Draft; IACUC Application (round 2)*

**Week 9 (Nov 5): Independent project proposal presentations (Part 2)**

- Present your project to lab
- Provide constructive written feedback to labmates

*Due – Proposal Draft; IACUC Application (round 2)*

*Assignment – Independent Proposal (modified in response to comments from labmates)*

**Week 10 (Nov 12): Conduct independent Projects. (\*\*No scheduled lab)**

*Due – Final Independent Proposal*

*Assignment – Find 5 references for project; Be prepared to bring data to next lab*

**Week 11 (Nov 19): Data analysis**

- Analyze your data and prepare results

*Due – 5 references for project; have data*

*Assignment – Study summary; Data Report*

**Week 12 (Nov 26): Poster making tutorial**

- How to make a scientific poster & why

*Due – Study Summary; Data Report*

*Assignment – Draft of Poster*

**Week 13 (Dec 3): In class poster exchange**

- In-class poster exchange and critical reading
- Critiques will be graded!
- Meet with instructors for writing feedback

*Due: Poster Draft*

*Assignment: Final poster*

**Week 14 (Dec 10): Poster session!**

*Good luck on the final!*