

Behavioral Biology of Animals (2000-004) :: Course Policies and Syllabus

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Research lab: Mendel 113 (look for me here if I'm not in 190C)
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Lecture: T and R, 10:00am – 11:15am Mendel Hall, Room 260
Lab: R 1:00pm – 3:50pm Mendel Hall, Room 181

Teaching Assistant: Sarah Baillie sbailie@villanova.edu, 519-5382 (office)
Office Hours: by appointment in Mendel 192

Required texts: (1) Alcock, J. 2009. *Animal Behavior: An Evolutionary Approach*. Ninth Edition, Sinauer Associates Inc., Sunderland, Mass. ISBN 978-0-87893-225-2

*Note: Additional readings will be assigned for specific lectures. Hard copies will be handed out in lecture and then placed in a folder outside my office.

Course Description

Welcome to the Behavioral Biology of Animals! We all have a desire to understand the world around us that goes beyond what we need to know in order to survive; this curiosity is usually the main reason for our interest in animal behavior. Why do the cardinals on campus perch at the tops of trees and chirp so loudly? Why do earthworms emerge from the ground when it rains? Why do some killer whales hunt in packs and others hunt singly? Why do human parents work hard, potentially sacrificing pleasures for themselves, to support their children and send them to college? Understanding animal behavior actually has many practical applications beyond satisfying our curiosity. By observing animals, we can learn about their ecological relationships and their evolutionary history. Many animals can serve as model organisms for understanding the behavior of our own species, including nervous system and brain function, as well as the evolution of human behavior. Finally, those of us who wish to maintain and preserve the environment need to understand the behavioral processes of animals in the wild in order to conserve and protect them.

In this course we will examine the mechanisms, evolution, and consequences of animal behavior. Topics will include: how genes and the environment affect behavior, learning and animal consciousness, hormones and their role in aggression and reproduction, predator-prey interactions, visual and auditory communication, courtship and mate choice, and human social behavior. The lecture portion of the course will include readings from the textbook, critical evaluation of papers from peer-reviewed journals, film clips, and discussions regarding current topics in animal behavior. The laboratory portion of the course (one three hour lab per week) has two important components: (1) learning about the *process* of science through laboratory exercises and student-led discussions of published papers; and (2) the application of the scientific method by completing an independent student-designed research project. The purpose of the discussion component is not only to help you understand basic biological concepts, but also to provide you with the skills to be able to critically analyze, interpret and evaluate information from any field. In addition to instructor-led exercises, the labs also include independent student-designed projects to provide a complete research experience including the formulation of hypotheses, the collection and analysis of data, and the written and oral

presentation of the results. This course is designed for students seeking to satisfy their Core Science requirement, and it is different than the Animal Behavior course offered for Biology majors (Biology 3011 & 3012).

Lecture Attendance and Policies

Attendance in the lecture is *strongly* encouraged; indeed, it is expected. I cannot imagine that you will find it possible to master this material without regular class attendance, and attendance and participation will be part of the criterion used in the calculation of your overall grade. Furthermore, you might miss something important, enlightening or entertaining. As I am sure you will notice, the lecture PowerPoints – which will be posted on Blackboard – will not tell the whole story, and they should not be considered a substitute for lecture attendance. Since you will have access to the lectures, you should not merely copy the words on the slide; I expect you to focus more on writing down things I say that help to synthesize information into coherent ideas. Regardless of whether you are in class or not, however, you are responsible for everything that is discussed in lecture, announced changes in the syllabus, and any handouts distributed in class. If you miss class, you must make your own arrangements to obtain class notes.

All assignments will be due at the times announced in class or in the syllabus. Late assignments will be penalized 10% of the points available for each 24-hour interval that they are late. Assignments > 1 week late will not be accepted unless you have medical or other valid documented reasons for the delay. The only valid reasons for missing an assignment deadline or an examination are those accepted by the University and published in the Student Handbook (Blue Book). If you know in advance that you will be missing an exam, it is your responsibility to contact the instructor PRIOR to the exam to make arrangements for a make-up exam.

I am here to help you not only learn the material covered in class, but also develop skills that will assist you in learning throughout your academic and professional careers. To that end, please feel free to ask us questions inside or outside of class if there is something you don't understand – one my primary objectives is to provide a supportive community for learning.

To facilitate learning, please be respectful of your classmates by adhering to the list below:

- Be prepared for class (at the very least, skim reading before class)
- Do not be late to class (classes will start and end on time)
- Avoid conversations with others during class
- Limit food and beverages to those that can be consumed quietly
- Turn off cell phones (cell phones going off will result in a quiz *for the entire class!*)

Laboratory Attendance and Policies

Laboratory attendance is mandatory. It will not be possible to recreate the lab on an individual basis, and the lab component is an integral and essential part of your experience. If there is an unexcused absence from the lab, it will be reflected in your participation grade. Furthermore, you will still be required to turn in all lab exercises. Exceptions will be made only for compelling circumstances, which must be approved by me PRIOR to your absence (see above). Although I am here to help, you are adults now and will be treated as such – with freedom comes responsibility, and ultimately you must be responsible for your own education.

The Biology Department policy is posted on the Biology Department web site (www.biology.villanova.edu), and it is included in this syllabus. It clearly states that humane treatment

and use of live and preserved animals is an integral part of courses in the Biology Department, and this course is no exception. Read the policy and sign the sheet on the penultimate page indicating that you have done so. If you have a problem with this official Department policy for moral or ethical reasons, you **MUST** see the instructor no later than the end of the first week of classes, so that the instructor may inform you of your options. We may also go off campus on a couple occasions, so please sign the off-campus waiver form on the last page.

Academic Integrity

The College of Liberal Arts and Sciences has adopted a standard policy for matters of academic integrity. All students in this course should carefully read the policy and associated explanatory statements. You will find these statements in the *Enchiridion* of the College of Liberal Arts and Sciences and the University *Blue Book*, both of which can be accessed through the web. Any student who has knowledge of any violation of the code is expected to bring that violation to the attention of the instructors. If you are at any time uncertain about what constitutes academic dishonesty, please consult these sources or talk to the instructor directly. Examples of such violations include, but are not limited to, using notes on an exam or quiz, looking at another student's exam or quiz, misrepresentation for the purpose of taking a makeup exam, providing another student with answers to an exam, unauthorized collaboration, and plagiarism. Be sure that you understand what constitutes plagiarism, and be careful that the work you do is yours alone. In instances of plagiarism, all parties involved will receive the same penalty. University policies pertaining to such issues will be strictly adhered to and the appropriate penalty will be assessed at the discretion of the instructor. There will be no exceptions to this policy.

Please read these statements. You are required to sign the form on the last page to acknowledge your understanding of this policy.

Academic Accommodations

It is the policy and practice of Villanova University to make reasonable accommodations for students with properly documented disabilities (written notification from the Learning Support Services). If you are eligible to receive an accommodation and would like to request it for this course please discuss it with me and allow a one-week notice before the accommodation would be needed. Otherwise, it is not guaranteed that the accommodation can be arranged on a timely basis. There is also support on campus for writing through the Writing Center. I will be happy to discuss your papers anytime, but I do not edit and 'pregrade' rough drafts. The Writing Center is a wonderful campus resource, and I suggest you use it if you would like help in how to write effective papers.

Exams, Assignments, and Grading

Your final grade will be based on your performance in both the lecture and the laboratory. Your lecture grade will be based primarily on two in-class exams and a final (comprised of a third exam and a cumulative essay portion). A variety of question formats may be used, including multiple choice, matching, short answer and essay. Exams will be designed to assess your understanding of factual material and key concepts. They will also test your ability to synthesize and apply this information to novel situations (in other words, situations we have not specifically covered in the class or in the text).

The main assignment associated with the lecture portion of the course involves the treatment of science in the media, where I will ask you to look through the lens of a scientist and not only summarize the article but also address its effectiveness in reaching out and appealing to non-scientists.

To this end, you will choose a “tertiary” (3^o) literature article (in magazines for the general public such as Time, Newsweek, or Science News, or in newspapers such as the New York Times, Philadelphia Inquirer, or CNN) published between Dec 2012 and Feb 2013. Your task is to: (1) choose an appropriate source published; (2) read it (many times) until you understand the article’s content thoroughly; (3) write an abstract of 300-400 words in *your own words* summarizing the science of the article; and (4) write a brief 1-paragraph summary (again, 300-400 words) addressing that author’s effectiveness in appealing to a broad audience. We will discuss more details in class. You will undoubtedly find it challenging to summarize an entire article in so few words, but remember that this is a **strict word limit**. Mark Twain famously wrote “Sorry I wrote such a long letter – I didn’t have time to write a short one.” This is an accurate reflection of the amount of effort required to craft a concise yet thorough summary.

In the laboratory part of the course, we will start the semester with smaller laboratories designed to provide experience in different types of approaches to studying behavior. During these early stages, you will be completing worksheets designed to help you develop knowledge and skills in scientific writing. These exercises will eventually lead to larger-scale projects, including a 3-week laboratory that culminates in a complete scientific paper.

All written assignments should be typed/word-processed, 12 pt. font, 1” margins, and double-spaced, with each page numbered. All papers in the course must be submitted electronically as an email attachment in Microsoft Word (LastNameAssignment.docx).

Note: I expect you to have run spell/grammar-check and carefully proof-read all submitted written material, as you will be evaluated on your ability to communicate clearly (which includes proper grammar, spelling and punctuation).

The general grade breakdown is shown below (with due dates in parentheses):

Lecture (56%):

Exam #1 (Tuesday, February 12):	14 %
Writing Assignment (Thursday, March 14):	8 %
Exam #2 (Tuesday, March 26):	14 %
Final Exam (Saturday, May 4):	20 %

Laboratory (34%):

Cricket Assignment (Thurs, Jan 24):	4 %
Fish Feeding Assignment (Thurs, Jan 31):	4 %
Bird Feeder Assignment (Thurs, Feb 7):	4 %
Crayfish Oral Presentation (Thurs, Feb 28):	8 %
Bird Song Assignment (Thurs, March 21):	4 %
Fish Schooling Paper (Thurs, April 25):	10 %

Attendance & Participation: both lecture and lab (10%), including film discussions

Final grades will be assigned based on a standard plus/minus scale (see below):

A	(93-100%)	C+	(77-79%)
A-	(90-92%)	C	(73-76%)
B+	(87-89%)	C-	(70-72%)
B	(83-86%)	D	(60-69%)
B-	(80-82%)	F	(< 60%)

The Evaluation of Assignments

Below is an outline of the factors I will take into consideration in assigning your final grade on papers and lab exercises, with a comparable grading scale applied to other assignments.

Grade: C

Paper satisfactorily (but minimally) meets expectations of the assignment. It directly addresses a question or issue relevant to the scope of the course, with adequate reliance on appropriate biological literature sources. It presents a logical argument with a clear statement of your central objectives; develops an argument that incorporates accurately reported information from primary literature sources; and reaches a clearly explained conclusion that follows logically from that argument. The argument is developed by an organized sequence of main points and supported by specific details and examples. The text is readable and relatively free of errors in syntax, grammar, spelling, usage, punctuation, and requested format.

Grade: B

Paper fulfills all of the requirements of a “C” paper and, in addition, presents a central argument that is well thought out and shows careful analysis of hypotheses and evidence in the biological literature. The argument demonstrates original and critical thought in synthesis and analysis. Points of interpretation are soundly and thoroughly argued. Supporting evidence is strong and extensive. Text contains few errors.

Grade: A

Paper fulfills all of the requirements of a “B” paper and, in addition, presents an argument that is outstanding in its clarity, logic, rhetorical skillfulness, and originality. It demonstrates that you have a thorough understanding of the paper’s topic and an ability to apply and communicate that understanding through excellent writing.

Grade: D

Paper makes an attempt to address the issue or question posed, but has one or more serious problems: it lacks a central thesis; it fails to develop a consistent, logical, well-organized argument; details are inaccurate or few; the text is difficult to read because of multiple errors.

Grade: F

Paper contains no central question or problem, or it makes no attempt (or a fake attempt) to address a stated question. The paper fails to develop an argument of any sort. The text is filled with errors. The paper shows little or no indication that the author attempted to meet the expectations of the assignment, or to follow directions.

*A paper that contains **any** plagiarized material, that fails to incorporate adequate acknowledgment of all sources, or that otherwise violates the standards of academic integrity established by the University, Department, and instructor **will receive a grade of “F”** — and trigger disciplinary procedures that can result in failure (F) for the **entire** course ... and even expulsion from the University.*

Tentative Course Syllabus (important due dates are highlighted)

[Before Spring Break]

Date	Lecture Topic	Reading	Lab Exercise
January 15	Introduction and Logistics	Chapter 1	<u>Lab:</u> Logistics & Statistics Downloading Programs Cricket Behavior
January 17	Behavioral Adaptation and Hypothesis Testing	Ch. 1 Andrade 1996 Hrdy 1977	
January 22	Levels of Analysis: Proximate & Ultimate Causes	Ch. 2 Holekamp & Sherman 1989	Cricket Assignment
January 24	Genes and Behavior	Ch. 3 Trut 1999	<u>Lab:</u> Fish Feeding (IFD)
January 29	Environment and Behavior Learning and Cognition	Ch. 3 Hauser 2000	Fish Feeding Assignment
January 31	<u>Guest lecture:</u> Dr. Diego Fernandez-Duque, Villanova's Psychology Dept		<u>Lab (outside):</u> Bird Feeders
February 5	Control of Behavior: Neural Mechanisms	Ch. 4	Bird Feeder Assignment
February 7	Organization of Behavior	Ch. 5 Bass 1997	*Review Session*
February 12	Exam 1		
February 14	Anti-predator Behavior	Ch. 6	<u>Lab:</u> Crayfish Aggression
February 19	Feeding Behavior	Ch. 7 Ricklefs 2007	Discussion on giving Scientific Presentations Viewing and discussion of the film <i>The Big Year</i>
February 21	Habitat Selection	Ch. 8	
February 26	Reproduction I: Battles of the Sexes	Ch. 10	<u>Lab:</u> Oral Presentation on Crayfish Proposal
February 28	Reproduction II: Sexual Selection	Ch. 10	
March 5	*** No Classes – SPRING BREAK ***		
March 7	*** No Classes – SPRING BREAK ***		

Tentative Course Syllabus (important due dates are highlighted)

[After Spring Break]

Date	Lecture Topic	Reading	Lab Exercise
March 12	Mating Systems	Ch. 11 Trumbo 2006 Warner 1984	<u>Lab</u> : Bird Song Analyses
March 14	Sexual Selection: <i>Courting</i> Writing Assignment (on 3 ^o article) due		
March 19	Communication I: The Languages of Life	Ch. 9 Payne 1998	Bird Song Assignment
March 21	Communication II: Classifying Communication	Ch. 9 Moeller 1989	*Review Session*
March 26	Exam 2		NO LAB
March 28	*** No Classes – EASTER RECESS ***		
April 2	Dr. Vik's Research	Iyengar 1999, 2008	<u>Lab</u> : Fish Schooling
April 4	Parental Care	Ch. 12 Mock et al. 1990	
April 9	Social Behavior I: The Costs and Benefits	Ch. 13; Ch. 6 (211-217) Ch. 7 (228-231) Packer & Pusey 1997	<u>Lab</u> : Fish Schooling
April 11	Social Behavior II: Kin selection & Eusociality	Ch. 13 Honeycutt 1992	
April 16	Cooperation and Conflict: To help or not to help?	Ch. 14; Emlen et al. 1995 Reeve & Nonacs 1992	<u>Lab</u> (outside): Trip to Elmwood Zoo
April 18	Sociality: <i>Friends & Rivals</i>		
April 23	Human Social Behavior and Darwinian Medicine	AB Ch. 14 Sherman & Flaxman 2001 Neese & Williams 1998	Viewing and discussion of the film <i>Gorillas in the Mist</i> Fish Schooling Assignment
April 25	Human Mating Strategies & Human Social Behavior	Buss 1994 Buston & Emlen 2003	
April 30	*** No Classes – Follows a Friday schedule ***		*Review Session*
May 2	Course Wrap-up; Course evaluations		
May 4	Final (Exam 3 + cumulative) @ 8:00 – 10:30am		

Statement on Animal Use in Biology Teaching

(General policy statement of the Department of Biology, Villanova University)

Many people, including students and professional biologists, share a concern for the use to which animals are put in the context of teaching. In this course it will be necessary to carry out one or more exercises that make use of preserved or live animals. Such use of animals in teaching is an integral part of the biology experience and as such has been designed to fit in with the overall aims and goals of the course. For this reason, students generally will not be excused from participating in those laboratories involving the student in the study of living or preserved animals. If you object to these types of exercises, please see the Chair of the Department of Biology immediately to discuss your concerns and be prepared to consider other course options.

You may be required to perform dissections or observations on preserved specimens. These animals have been obtained from reputable supply houses that follow regulated guidelines for the humane sacrifice and preparation of the animals. In some other cases the lab exercise may involve the use of freshly euthanized animals. You need not participate in euthanizing the animals yourself; all such animals have been euthanized in accordance with regulations designed to minimize their suffering. Although some may regard certain animals (such as mammals) as being more “important” or more worthy of protection than others, all animals have intrinsic value and they should be treated accordingly. In this lab we recognize and respect the value of all living things.

The preceding section about dissection and euthanasia of living animals should not be relevant for this course. Overall, the emphasis in the preceding section on structure and function is peripheral to our primary focus. The Animal Behavior Laboratory focuses more on **why** animals behave the way that they do, and less so on **how** that behavior happens. Consequently, we will **not** have much need for dissection or other invasive approaches necessary for evaluating form and function. Instead, we will focus mainly on the behavior of intact, living animals. Our “use” of the animals will involve mainly observation and experimental manipulation of behavior to investigate hypotheses about function.

Acknowledgment of Animal Use Policy

Please read and sign this form after you have examined the syllabus for MSE 2000-004. Detach the signed form and return it to your instructor. Your form must be received before the beginning of the second meeting of MSE 2000-004.

I have read the course outline and syllabus for MSE 2000-004 and understand the Department of Biology **Statement on Animal Use in Biology Teaching**.

Name (printed)

Signature

Date

Acknowledgment of Course Policy on Academic Integrity

I have read the course outline and syllabus for MSE 2000-004 and understand the instructor's policy regarding **academic integrity** in the context of this course.

Signature

Date

VILLANOVA UNIVERSITY
Department of Biology

Assumption of Risk and Release
Field Trips and Off-Campus Activities

This Release is executed by _____ to Villanova University, Villanova, PA.

As a Villanova student voluntarily enrolled in _____, I understand that I may participate
course name and number
in various field trips in connection with the course throughout the semester (the "Activity").

Knowing the dangers, hazards, and risks of the Activity, and in consideration of being permitted to participate in the Activity, on behalf of myself, my family, heirs, and personal representative(s), I, the undersigned, agree to assume all the risks and responsibilities surrounding my participation in the Activity, the transportation, and in any independent research or activities undertaken as an adjunct thereto, and in advance release, waive, forever discharge, and covenant not to sue Villanova University (including the Department of Biology), its governing board, officers, agents, employees, and any students acting as employees (hereafter called the "Releasees"), from and against any and all liability for any harm, injury, damage, claims, demands, actions, causes of action, costs, and expenses of any nature that I may have or that may hereafter accrue to me, arising out of or related to any loss, damage, or injury, including but not limited to suffering and death, that may be sustained by me or by any property belonging to me, whether caused by the negligence or carelessness of the Releasees, or otherwise, while in, on, upon, or in transit to or from the premises where the Activity, or any adjunct to the Activity, occurs or is being conducted.

I understand and agree that Releasees do not have medical personnel available at the location of the Activity or on the campus. I understand and agree that Releasees are granted permission to authorize emergency medical treatment, if necessary, and that such action by Releasees shall be subject to the terms of this Agreement. I understand and agree that Releasees assume no responsibility for any injury or damage which might arise out of or in connection with such authorized emergency medical treatment.

It is my express intent that this release and hold harmless agreement shall bind the members of my family and spouse, if I am alive, and my estate, family, heirs, administrators, personal representatives, or assigns, if I am deceased, and shall be deemed as a "Release, Waiver, Discharge and Covenant" not to sue the above-named Releasees. I further agree to save and hold harmless, indemnify, and defend Releasees from any claim by me or my family, arising out of my participation in the Activity.

In signing this Release, I acknowledge and represent that I have fully informed myself of the content of the foregoing waiver of liability and hold harmless agreement by reading it before I sign it, and I understand that I sign this document as my own free act and deed; no oral representations, statements, or inducements, apart from the foregoing written statement, have been made. I understand that Villanova University does not require me to participate in the Activity, but I want to do so, despite the possible dangers and risks and despite this Release. I further state that I am at least eighteen (18) years of age and fully competent to sign this Agreement; and that I execute this release for full, adequate, and complete consideration fully intending to be bound by the same. I further state that there are no health-related reasons or problems which preclude or restrict my participation in the Activity, and that I have adequate health insurance necessary to provide for and pay any medical costs that may be attendant as a result of injury to me.

THIS IS A RELEASE OF LEGAL RIGHTS. READ AND BE CERTAIN YOU UNDERSTAND IT BEFORE SIGNING.

IN WITNESS WHEREOF, I have executed this release this _____ day of _____ .

Signature

Witness