ZOO 4926 – Introduction to Animal Behavior

Section 0972 / Class Number 20531

Syllabus for Spring 2020

I. Course Description and Prerequisites

The scientific study of the mechanistic and evolutionary causes of animal behavior, including communication, foraging and anti-predator behavior, spatial behavior, mating behavior, parental care, and social behaviors. 3 credits.

Prerequisites: BSC 2010/2011 and labs, or the equivalent, with a minimum grade of "C". PCB 4674 suggested (previously or concurrently) but not required.

II. Course Meetings

Lectures: MWF period 5, 11:45 a.m. – 12:35 p.m., 211 Bartram Hall

First / Last day of classes: Monday 06 January 2020 **/** Wednesday 22 April 2020
Final Exam: Thursday, 30 April 2020, 10:00 a.m. – 12:00 p.m. (not used except in case of emergency)

III. Instructors

Course Instructor:
Dr. Nicole Gerlach
Department of Biology
E-mail: ngerlach@ufl.edu (preferred)
Office: 520 Carr Hall
Phone: 352-392-2419
Office Hours: Tuesday and Wednesday 1-2:15 p.m. or by appointment

IV. Course Communications

A. Course Website: https://ufl.instructure.com/courses/387990

B. Contacting Your Instructor: If you have a question about course mechanics or course material that cannot be answered from the syllabus, course announcements, or the course FAQ, please post it to the Discussion Boards on Canvas (see section IX "Getting Help", below). If you have a question involving a personal/grade-related issue, e-mail is by far the best way of contacting Dr. Gerlach (rather than the phone). All e-mail correspondence should originate from your @ufl.edu account, have your full name in the body of the e-mail, and contain "ZOO 4926" in the subject line. E-mails not meeting these requirements may not be recognized by my e-mail filters, and thus may not be answered. I do my best to reply within 24 hours during the week, and 48 hours over the weekend. E-mails and Discussion Board posts are typically checked at least once per day, but sometimes not more than that.

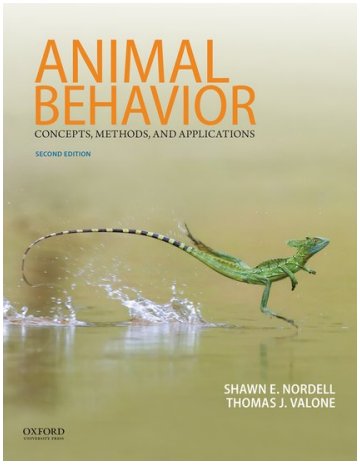
C. **Communications From Your Instructor:** Each student is individually responsible for reading and following the instructions, guidelines, and schedules that are in this syllabus, posted on the course webpage, and announced in class. Not having read the information in this syllabus, on the webpage, or in course announcements will not constitute an excuse for missing deadlines, assignments, or other assessments. Please set your preferences in Canvas so that you receive timely notifications of course announcements and other information.

V. Course Resources

A. Textbook

Animal Behavior: Concepts, Methods, and Applications, *2e* by Shawn E. Nordell & Thomas J. Valone. Oxford University Press (publisher), 2016.

A copy of this textbook is on reserve at the Marston Science Library.



B. Learning Catalytics

We will use the Learning Catalytics Classroom Response System (https://learningcatalytics.com/) for clicker/quiz questions during class, as well as for out-of-class response questions. Learning Catalytics allows students to use a laptop, tablet, smartphone, etc. to participate in a variety of types of questions. Information on correctly registering for Learning Catalytics will be available in Canvas. When setting up your account, **you must use your Gatorlink (ufl.edu) e-mail address.** Using an e-mail address other than your UFL e-mail address will result in you receiving NO credit for Learning Catalytics questions.

C. Course Website (Canvas)

Class material - including the syllabus, handouts, assignments, and gradebook – will be posted on the course Canvas website (https://ufl.instructure.com). For help with Canvas, call the UF Computing Help Desk at 352-392-4357, or visit the e-Learning support website: http://help.instructure.com/.

VI. Course Objectives

Behavior is one of the most important and interesting aspects of animal biology. Behaviors permit flexibility that allows animals to respond rapidly to environmental changes. This course exposes students to the broad field of animal behavior. Students will come to understand the historical foundations of the field, as well as current theories and evidence for a broad range of behavioral topics. We will also focus on how the science underlying our theoretical understanding of behavior is conducted, and how behavioral hypotheses at all levels of analysis can be tested experimentally. Students also participate in practical exercises to learn some fundamental techniques used to study behavior, and will practice reading and analyzing current scientific literature. Behavioral ecology and the evolution of behaviors as adaptations will be recurring themes interwoven through all topics discussed.

By the end of this course, students should be able to:

- Distinguish between the four types of questions that may be asked about animal behavior, and formulate hypotheses of each type to explain a given behavior.
- Explain how behavioral hypotheses are formulated, the procedures used to test them, and the types of data that can be collected.
- Understand some of the mechanisms involved in the production of a behavior by an animal.
- Understand the role of natural and sexual selection in the evolution of behavior.
- Explain how these principles can be used to understand human behavior.

VII. Course Policies

A. **Time Commitment**
The UF College of Liberal Arts and Sciences assumes that each student will devote 3-4 hours per week per credit-hour to each course during the regular semester. Because ZOO 4926 is 3 credits, each student should therefore expect to devote 9-12 hours per week to this course in a 15-week semester.

B. **Attendance**
Students are expected to attend all scheduled classes, and are responsible for all material presented in lecture, online, and in the assigned readings. Students who miss class are welcome to ask to borrow the notes of their classmates; the instructor will not be responsible for providing notes. Please note that no in-class questions or participation points can be made up, regardless of the reason for missing class.

C. Exams
Students are expected to arrive on time; no extra time will be given for students who arrive late. Any material covered during the lecture or assigned in the reading may be included in the lecture exams. This can include textbook illustrations, videos, Powerpoint slides, and actual lectures. Take notes!

Make-up exams will **only** be available in cases of medical and/or family emergencies when documented by an accompanying letter from the Dean of Students (https://care.dso.ufl.edu/instructor-notifications/), or for official academic activities (in which case student must contact the instructor a minimum of two weeks in advance). The student must notify the instructor either ahead of time or within 24 hours of the missed exam, and the student is responsible for scheduling a timely make-up exam with the instructor. Make-up exams due to pre-arranged official activities may be scheduled *prior* to the in-class exam.

After the exam, I will post exam keys that highlight the salient points for which credit is awarded. Please contact me immediately if 1) your score is incorrectly summed, or 2) your posted score on Canvas does not agree with the score written on your exam. I will consider other re-grade requests on a case-by-case basis, however, I will not argue about point assignments. To request a re-grade, write a brief paragraph explaining why you believe your answer to a question was incorrectly scored, making specific reference to the posted key, and submit it along with your original exam paper after class or in office hours. Re-grade requests must be submitted within one week of the scores being posted.

D. Late Work
Assignments should be submitted by the assigned deadline. Late work will be subject to a 20% penalty for every day it is late, up to four days. For example, an assignment initially worth 10 points will be subject to a 2 point penalty if it is submitted up to 24 hours after the deadline, a 4 point penalty up to 48 hours, etc. Assignments may not be submitted more than four days after the assigned deadline without a notification from the Dean of Students documenting a medical/family emergency, as described above.

E. **Classroom Behavior**
Readings should be done in advance of class; you are expected to come ready to discuss the topics. Please be courteous to others during both lecture and lab, particularly during in-class discussions. Students exhibiting disruptive behavior in class will be asked to leave, with the subsequent loss of participation points for that day. Use of electronic devices in class to take notes or otherwise participate in classroom activities is approved, but all electronic devices should be set to silent mode before coming to class. Approved electronic devices are laptop computers, smart phones, tablets, and voice recording devices. Other uses of these devices or the use of unapproved devices will be considered disruptive. Unapproved electronic devices include video recorders, digital cameras, and MP3 players.

F. Office Hours
If you need to talk to me outside of class time, please make an effort to attend posted office hours whenever possible. If you have a conflict with those hours, I am happy to make an appointment to meet you and address questions at a mutually agreeable time. However, I cannot meet with students on a drop in basis outside of office hours – please send me an e-mail to set up an appointment before stopping by!

G. **Grammar**
Correct grammar, punctuation, spelling, capitalization and paragraphing should be used in any college level submission, including exams and typed reports. I will take note of spelling and grammar and I will grade accordingly.

VIII. UF Policies

A. Academic Honesty
All students registered at the University of Florida have agreed to comply with the following statement:

> *"I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University."*

In addition, on all work submitted for credit the following pledge is either required or implied:

> *"On my honor I have neither given nor received unauthorized aid in doing this assignment."*

Cases of plagiarism or other academic dishonesty will not be tolerated, and may result in assignment penalties, course grade penalties (up to and including a failing grade in the class), and/or other sanctions. If you have knowledge of any instances of academic dishonesty in this class, please notify the instructor or contact the Student Honor Court (392-1631) or Cheating Hotline (392-6999). For additional information on Academic Honesty, please refer to the University of Florida Academic Honesty Guidelines at: https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/.

B. Accommodations for Students With Disabilities
Students who will require a classroom accommodation for a disability must contact the Dean of Students Office of Disability Resources, in Peabody 202 (phone: 352-392-1261). Please see the University of Florida Disability Resources website for more information at https://disability.ufl.edu/. It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed. Therefore, I ask that students provide documentation of a requirement for accommodation **by the second week of classes** or as soon as possible thereafter. Once notification is complete, the Dean of Students Office of Disability Resources will work with the instructor to accommodate the student. No accommodations are available to students who lack this documentation, and accommodations are not retroactive.

C. Drop/Add/Withdrawal
A student can drop/add during the drop add period with no penalty. After drop/add, a student who drops will receive a W until the date listed in the academic calendar. After that date, the student may be assigned an "E" (fail). Note: it is the responsibility of the STUDENT to withdraw from a course, not the instructor. Failure to participate/complete the class is NOT a drop.

D. Teacher Evaluations
Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the e-mail they receive for GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

IX. Getting Help

Asking for help is not a sign of weakness or failure! No one understands everything, and no one can do it all on their own. One of the least appreciated, but most useful things you can learn in college is what to do when you're facing a challenge that you may not be able to overcome on your own. I want you all to succeed, and there are tons of resources out there for the asking, so please: ASK!

A. Computing Problems

For issues with technical difficulties with Canvas, please contact the UF Help Desk at:

- Learning-support@ufl.edu
- (352) 392-HELP - select option 2
- https://lss.at.ufl.edu/help.shtml

It is each student's responsibility to check their LearningCatalytics gradebook in a timely fashion to be sure their submissions are being properly recorded. **For problems with Learning Catalytics, call the following support number**: 1- 800-677-6337 or visit https://learningcatalytics.com/pages/support .

B. University Support Services

College can be a very stressful time in a person's life. Resources are available on campus to help students meet academic goals and solve personal problems, which may interfere with their academic performance. If you find that you are having difficulty emotionally or academically, there is substantial support available. See "A Self Help Guide for Students" or contact on of the following services:

1. UF Counseling and Wellness Center, Radio Rd Facility, 392-1575
2. Dean of Students Office, 202 Peabody Hall, 392-1261
3. Career Resource Center, Reitz Union, 392-1601
4. CLAS Academic Advising Center, Farrior Hall, 100 Fletcher Drive, 392-1521
5. UF Field and Fork Pantry, 564 Newell Dr., 294-3601

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact the Dean of Students (202 Peabody Hall, 392-1261) for support. Furthermore, please notify your instructor(s) if you are comfortable in doing so. This will enable us to provide any resources that we may possess.

C. Other Questions

If you have non-tech-support questions about other aspects of the course, check the following sources first to see if it is already answered, **before** e-mailing your instructor:

- Course Syllabus
- Course Announcements (this is the primary means that your instructor has to communicate with you in a timely manner)
- Course FAQ Discussion Boards

If you still cannot find the answer to your questions:

- If it is a question that others might find useful to know the answer to as well (regarding the course material, specifics of an assignment, etc.), post it to the discussion board.
- If it is a question specific to you (e.g. account or grade specific), contact Dr. Gerlach via e-mail.

X. Assessments and Grading

A. **Course Structure**
Final grades will be based on 4 exams (15% each), homework assignments/projects throughout the semester (25%), and participation in lecture activities including Learning Catalytics questions (15%). A more detailed breakdown of assignments and grading proportions can be found in the Canvas gradebook.

B. **Assignments**
Assignments for this course focus around having students practice with the course material, and gain experience with observing and quantifying animal behavior in the field, and with identifying hypotheses to explain animal behavior and designing experiments to test these hypotheses.

- **Tinbergen's 4 Questions and Group Selection Practice** – Students will practice applying the core principle of Tinbergen's 4 questions to hypothetical examples of behavior, and will practice identifying group selection-based explanations for behavior and formulating alternative hypotheses.
- **Questioning Behavior** – Students will make casual observations about animal behavior, formalize these into scientific questions about behavior, formulate testable hypotheses about this behavior, and generate predictions about the results of testing these hypotheses.
- **Data Collection Preparation** – Students will work in pairs to devise a methodology for observing the behavior of wild animals, including creating an ethogram, formulating a sampling methodology, and creating an appropriate data sheet for recording their observations.
- **Field Notes and Ethogram Analysis** – Students will work in pairs to spend a minimum of four hours observing their specified wild animal, and will complete a preliminary analysis to compare the time budgets of two groups of animals (e.g. female vs. male, adult vs. juvenile, etc.)
- **Experiment** – Students will design a set of two linked experiments that address a question regarding animal behavior from multiple levels of analysis, and discuss potential results to these experiments and their implications.

All assignments must be submitted to Canvas by 11:40 a.m. (i.e. prior to class) on the scheduled due date unless otherwise specified. Assignments submitted on paper or via e-mail will not be accepted. TurnItIn software will be used to check all assignments for originality.

C. **Learning Catalytics**
Learning Catalytics will be used for both in-class and out-of-class clicker/quiz questions. Most Learning Catalytics questions will be scored as 1 point for a correct answer and 0.5 points for an incorrect answer. Learning Catalytics has an answer/discuss/answer feature in which a question is presented for a second time after students have discussed the question with their classmates. In these cases, both the initial question and the second presentation are each worth 1 point. No participation credit will be given without a submitted answer, so please make sure that your device is charged and has a stable connection to the internet. Your final Learning Catalytics score will be determined as the proportion of possible points that you earned, scaled to 80%. Thus, if you earn 80% or more of the possible Learning Catalytics points, you will receive 100% of the course points for this assignment.

D. Extra Credit
There will be four short extra-credit opportunities in this course in which students are asked to read and evaluate the primary literature related to course material, corresponding to each of the four lecture exams. Each opportunity will be worth a maximum of 0.5% of the final course grade. More information regarding these assignments and their due dates will be available on the Canvas course site. No individualized extra credit opportunities will be available.

E. Grading
Minimum grade cutoffs are listed below. These cutoffs will not be raised; in other words, if you receive 93% of the possible points, you are guaranteed to earn an A grade. A curve may be applied to individual

exams or assignments, or to the final overall scores, depending on the class average, and will be communicated clearly. However, I will *not* adjust cut-offs or round-up grades on an individual basis for any reason.

Point Range (%)	Letter Grade
≥ 93	A
≥ 90	A–
≥ 87	B+
≥ 83	B
≥ 80	B–
≥ 77	C+
≥ 73	C
≥ 70	C–
≥ 67	D+
≥ 63	D
≥ 60	D–
< 60	E

Note that the current UF policy for assigning grade points is available at the following undergraduate catalog web page: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.

F. **Incomplete("I"):** If a student has completed the majority of the course work with a passing grade and particular DOCUMENTED circumstances prevent completion of the course in the time allotted, the student may, with the agreement of the instructor, be assigned an "I*" pending resolution of the grade. All incompletes MUST be resolved by the end of the following term or the student will receive a grade of "E" (failing).

G. Special Treatment

Please do not request individual special treatment regarding grading at the end of the semester; **I do not adjust grades for individuals for any reason**. Plan to do well on all exams and other assignments from the beginning; if you are having difficulty in the class, please let me know sooner rather than later.

XI. Disclaimer

This syllabus represents the current plans and objectives; however, schedules, requirements, and assignments may change throughout the semester as the need arises. Such changes, communicated clearly, are not unusual and should be expected.

XII. Weekly Schedule

NOTE: The following schedule is tentative; lecture topics, coverage, and reading assignments may change. Updated schedule and supplemental reading assignments will be posted on the course website throughout the semester.

Week #	Lecture #	Date	Lecture Topic	Chapter
1	1	M 06 Jan	Introduction to Animal Behavior	1.1, 1.4-1.5
	2	W 08 Jan	Tinbergen's Four Questions	1.2-1.3, suppl.
	3	F 10 Jan	Methods for Studying Behavior	2.1-2.2
2	4	M 13 Jan	Ultimate Causes – Selection I	3.1-3.2, 4.1
	5	W 15 Jan	Ultimate Causes – Selection II	3.3-3.4
	6	F 17 Jan	Ultimate Causes – Phylogenies	2.2, suppl.
3		M 20 Jan	MLK Jr. Day – NO CLASS	
	7	W 22 Jan	Proximate Causes – Genetics	4.2-4.3
	8	F 24 Jan	Proximate Causes – Animal Personalities	4.4
4	9	M 27 Jan	Proximate Causes – Hormones	Suppl.
		W 29 Jan	**EXAM I (Lectures 1-9)**	
	10	F 31 Jan	Proximate Causes – Neuro/Sensory I	5
5	11	M 03 Feb	Proximate Causes – Neuro/Sensory II	5, 7.1-7.2
	12	W 05 Feb	Proximate Causes – Learning I	7.3

	13	F 07 Feb	Proximate Causes – Learning II	7.4-7.6
6	14	M 10 Feb	Communication I	6.1-6.2
	15	W 12 Feb	Communication II	6.3-6.4
	16	F 14 Feb	Communication III	6.5-6.6
7	17	M 17 Feb	Foraging	8
	18	W 19 Feb	Antipredator Behavior	9
	19	F 21 Feb	Introduction to Sexual Selection	12.1
8		**M 24 Feb**	**EXAM II (Lectures 10-18)**	
	20	W 26 Feb	Intrasexual Selection	12.4, 12.5
	21	F 28 Feb	Intersexual Selection I	12.2, 12.3
		M 02 Mar	SPRING BREAK – NO CLASS	
		W 04 Mar	SPRING BREAK – NO CLASS	
		F 06 Mar	SPRING BREAK – NO CLASS	
9	22	M 09 Mar	Intersexual Selection II	12.3, 12.6
	23	W 11 Mar	Mating systems I - Polygyny	13.1, 13.3
	24	F 13 Mar	Mating systems II - Polyandry / Leks	13.3, 13.4
10	25	M 16 Mar	Mating systems III - Monogamy and EPCs	13.2, 13.5
	26	W 18 Mar	Parental care I	14.1, 14.5
	27	F 20 Mar	Parental care II	14.2
11	28	M 23 Mar	Parental care III	14.3, 14.4
		W 25 Mar	**EXAM III (Lectures 19-28)**	
	29	F 27 Mar	Animal Navigation	10.4-10.5
12	30	M 30 Mar	Migration	10.3
	31	W 01 Apr	Dispersal	10.1-10.2
	32	F 03 Apr	Habitat Selection	11.1
13	33	M 06 Apr	Territoriality	11.2
	34	W 08 Apr	Intro to Game Theory	11.4
	35	F 10 Apr	Aggression	11.3
14	36	M 13 Apr	Dominance Hierarchies	15.2
	37	W 15 Apr	Sociality and Cooperation	15.1
	38	F 17 Apr	Kin Selection and Eusociality	15.3-15.4
15	39	M 20 Apr	Cooperation and Altruism in Non-Relatives	15.5
	40	W 22 Apr	**EXAM IV (Lectures 29-40)**	
		F 24 Apr	READING DAYS – NO CLASS	