

BIOLOGY 4350-ANIMAL BEHAVIOR

Professor: Curt Walker, Ph.D. Spring Semester 2015, 3 credits

27483 Lecture section 1, Science 204, at 12-12:50 p.m. MWF

Office: 124 Science Building; phone ext: 652-7785

Office hours: 9 am MWF, 10-noon R.

Textbook: Animal Behavior: Concepts, Methods, and Applications, by Nordell and Valone, 2014, Oxford University Press.

General Education Course: BIOL 4350 is intended for life science majors, and explores the details of animal behavior and its evolutionary consequences. It is the student's responsibility to ascertain that this course is acceptable in his/her program of study.

The course satisfies the General Education requirement for a second life science course.

This is an elective course for biology majors at Dixie State College. As a Life Science General Education course, objectives include the following:

Students will explain and apply major concepts of a view of life, the cell, and the genetic basis of life,

Students will demonstrate knowledge of the process of science including asking testable questions, using inductive and deductive reasoning in forming hypotheses and in making reliable predictions,

Students will explain the objective of science and research including distinguishing among the natural sciences, liberal arts (humanities and fine arts, and social and behavioral sciences), and pseudo-science,

Students will compute ratios, proportions, percentages, decimals, fractions, frequencies, and elementary probabilities.

Course Objectives: All students registered for the course will be assumed to have great familiarity with the basic principles of chemistry and biology. This course is designed to prepare students for careers in many fields of biology. Animal behavior is a fascinating but somewhat complex subject; students should be aware that the course will be rigorous, demanding time and concentration. After successful completion of this course, the student will be able to, through testing, written or oral reports:

... demonstrate a thorough understanding of the measurement of behavior, including experimental design and analysis,

... demonstrate a basic understanding of the mechanisms of evolutionary change, and how animal behavior is influenced by natural selection,

... demonstrate a basic understanding of behavioral categories, their evolution, and some current research in the field,

... demonstrate knowledge of how genes shape nervous system structures and interact with environment to determine observable behavior patterns.

Grading Scale:

93-100% = A (4.0)

80-82.99% = B- (2.7)

67-69.99% = D+ (1.4)

90-92.99% = A- (3.7)

77-79.99% = C+ (2.4)

63-66.99% = D (1.0)

87-89.99% = B+ (3.4)

73-76.99% = C (2.0)

60-62.99% = D- (0.7)

83-86.99% = B (3.0)

70-72.99% = C- (1.7)

59% or less F (0)

At any time, the student may request a discussion of his/her grade in the course. It is the student's responsibility to request grade information, which is always available.

Disabilities: If you are a student with a medical, psychological, or learning disability, or think you might have a disability and would like accommodations, contact the Disability Resource Center (652-7516) in the Student Services Center. The Disability Resource Center staff will determine eligibility of the student requesting special services and determine the appropriate accommodations related to their disability.

Attendance: Students are responsible for all material presented in lectures. Excused absences must be pre-arranged. It is inappropriate to bring children to class, and Dixie State College policy prohibits this practice.

Class Participation: Because a goal of the course is to instill an ability to reason using evolutionary logic, participation in group discussions is important. Participation, reduced for tardiness, failure to do assigned reading, and absences, will constitute 10 % of the course grade.

Exams: Four exams will be given, in addition to a comprehensive final exam. Questions will include fill-in-blank, multiple choice, and short essays. **Each exam, including the final, is worth 200 points, for a total of 1000 points possible.** Missing an exam is strongly discouraged; makeup exams will occasionally be given, but 20 points per day will be deducted from the score. Exams are taken in the Testing Center. **Unless prior arrangements are made, 20 pts/day are deducted for exams taken late. No exceptions.**

My exam scores: Exam 1: _____/200, _____% Quizzes:
 Exam 2: _____/200, _____%
 Exam 3: _____/200, _____%
 Exam 4: _____/200, _____%
 Final: _____/200, _____%
 Total: _____/1000, _____%

LECTURE SCHEDULE			Minimum Reading:
M	1/12	Course Introduction, Defining Behavior and Why and How We Study Behavior	Chapter 1
W	1/14	Review of Science as a Way of Knowing	Chapter 1
F	1/16	Evolution is the Basis of Studying Animal Behavior	Chapter 2
W	1/21	Animal Behavior Study: Methods	Chapter 3
F	1/23	Animal Behavior: Psychology vs. Zoology	Chapter 3
M	1/26	Genetics AND Environment 57-66	Chapter 4
W	1/28	Genotype-Environment Interaction 67-77	Chapter 4
F	1/30	Learning	Chapter 5
M	2/2	Learning (Exam 1, Chapters 1-4)	Chapter 5
W	2/4	More Nervous System Wiring	Chapter 5
F	2/6	FILM: Evolutionary Arms Race	

M	2/9	Communication	Chapter 6
W	2/11	Communication	Chapter 6
F	2/13	Communication	Chapter 6
W	2/18	Finding Food	Chapter 7
F	2/20	Finding Food	Chapter 7
M	2/23	Optimal Foraging	Chapter 7
W	2/25	Avoiding Predation	Chapter 8
F	2/27	Avoiding Predation (Exam 2, Chapters 5-7)	Chapter 8
M	3/2	Habitats and Fighting	Chapter 10
W	3/4	Habitats and Fighting	Chapter 10
F	3/6	Habitats and Fighting	Chapter 10
M	3/16	Sexual Selection	Chapter 11
W	3/18	Sex	Chapter 11
F	3/20	Sex	Chapter 11
M	3/23	FILM on Sexual Behavior	
W	3/25	Mating Systems	Chapter 12
F	3/27	Mating Systems (Exam 3, Chapters 8-11)	Chapter 12
M	3/30	Parenting	Chapter 13
W	4/1	Parenting	Chapter 13
F	4/3	FILM on Social Behavior	
M	4/6	Parenting	Chapter 13
W	4/8	Social Behavior	Chapter 14
F	4/10	Social Behavior	Chapter 14
M	4/13	Social Behavior	Chapter 14
W	4/15	Dispersal and Migration	Chapter 9
F	4/17	FILM (Exam 4, Chapters 12-13)	
M	4/20	Dispersal and Migration	Chapter 9
W	4/22	Dispersal and Migration	Chapter 9
F	4/24	Special topics/Makeup	
M	4/27	Special topics	
W	4/29	Course Review	

FINAL EXAM: Wed, May 6th, 12:30 pm – 2:30 pm. Penalty for missing final exam: course failure. No early exams will be given without dean's permission.

BIOLOGY 4355-ANIMAL BEHAVIOR LABORATORY

27484 Professor: Curt Walker, Ph.D. Spring Semester 2015, 1 credit

LAB section 1, Science 204, 1-3:50 p.m. R

Office: 124 Science Building; phone ext: 652-7785

Office hours: MWF @ 9 am, R @ 10-noon.

General Education Course: BIOL 4355 is intended for life science majors, and explores the details of animal behavior and its evolutionary consequences. It is the student's responsibility to ascertain that this course is acceptable in his/her program of study.

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Disabilities: If you are a student with a medical, psychological, or learning disability, or think you might have a disability and would like accommodations, contact the Disability

Resource Center (652-7516) in the Student Services Center. The Disability Resource Center staff will determine eligibility of the student requesting special services and determine the appropriate accommodations related to their disability.

Attendance: Students are responsible for all laboratory experiments. Excused absences must be pre-arranged, as early as possible.

Final Poster: This poster is going to be based on your research project. You should carefully follow the format of research posters found in the halls. There should be a simple introduction, materials and methods, results, and discussion. Ask me if you do not understand what belongs in each section. Data should be front and center and very obvious and clear.

Posters must be completely finished by April 16th for full credit.

Grades will be determined using the rubric handed out separately. I will deduct 20 points per day for each day the poster is late (Total possible: 100 points). The poster counts for 50% of the final course grade.

Your project must involve you observing behaviors for at least ten hours. A small budget can be reimbursed for supplies, which must be approved by the professor BEFORE purchases are made.

Final Exam: The final exam will be given in lab on the last day of the semester. It will consist of multiple choice and fill in blank questions created from the lab exercises completed during the course, 100 pts possible. This exam counts for half of the final grade in the course.

TENTATIVE LAB SCHEDULE

Read BEFORE Lab:

R	1/15	Lab Introduction, Using Optics, Learning to Observe	Handout
R	1/22	Watching Ducks as a Behaviorist	Chapter 1-lab
R	1/29	Crickets in the Lab: Interobserver Reliability	Chapter 2-lab
R	2/5	Seed Selection by Birds at Feeders <i>Proposals due</i>	Chapter 21-lab
R	2/12	Competition Among Birds at Feeders	Chapter 22-lab
R	2/19	Candid Camera: Focal or Scan?	Handout
R	2/26*	Free Lab: Work on Semester Projects	
R	3/5	Human Nonverbal Communication on Campus	Chapter 23-lab
R	3/19	Non-observed Behavior: GUDs	Handout
R	3/26	Bugs in the Lab	Chapter 3-lab
Sat	3/28	**Optional Indian Peaks Field Trip**	Handout
R	4/2	Imprinting Among Ducks and Chicks in Lab	Chapter 15-lab
R	4/9	Observing Fish and Creating Testable Hypotheses	Handout
R	4/16	Ant Foraging <i>Posters due</i>	Chapter 9-lab
W	4/22	Presentation of Research Projects in Afternoon	
R	4/23	Final Exam in Lab	