Introduction to Animal Behavior

Instructor ..... *Avinash D Singh Bala, Ph.D.*
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Schedule and Backup file access: ..... Avinash's UO Page
CLASS TIME (30, Pacific Hall) ..... 10:00 – 11:50 Mo, Tu, We, Th
DISC/LAB TIMES (130, Huestis Hall)
Section 1 (CRN 40322) ..... 1300-1550 Tu, Th
Section 2 (CRN 40323) ..... 1300-1550 Mo, We

OFFICE HOURS (Hours below, and by appointment)
Avinash ..... 1550-1650 Mo & Th (130 HUE)

Textbook (Required) ..... Animal Behavior by John A Byers
Further reading
1. Animal Behavior. John Alcock, 10th ed (*library reserve*)
2. Perspectives on Animal Behavior. Judith Goodenough, 3rd ed (*library reserve*)

Class Description and Goals

The number and diversity of animal species is equaled only by the variety and diversity of their behavior. Animals can be elegant and savvy at one instant, yet ruthless and amazingly stupid the next. How did this diversity of behavior arise, and what drives each animal to behave as it does? Why does each animal seem so exquisitely suited to its environmental niche, and its behavior so matched with its food and attractive to its mate? The answer to all these questions – and the starting hypothesis for this class – is that each animal, at every point in time, behaves in a way that maximizes its chances of reproduction.

We will explore the questions listed above, the influence of genetics and learning, interactions within and between species, mating systems and parental behavior, and finally, how we can apply lessons we learn from animals to our own species. The materials for this class will be the material discussed in class and presented on lecture slides, and selected chapters from the Text – Animal Behavior by John Byers. Finally, you will be assigned a few landmark articles authored by researchers on animal behavior, which are written for a lay audience.

Course Objectives

- Explain animal behavior based on the principle of natural selection.
- Understand and apply the principles and methods of scientific inquiry
- Read and understand scientific writing
- Search for and cite peer-reviewed scientific articles
- Understand human behavior in an evolutionary context

Quizzes and the Reading assignments will help keep you up to date with the material. Lecture slides and any associated notes will be available online, but Lectures will include material – both spoken and multi-media – which will not be available online. Performance in this class is correlated with attendance, so you should attend all classes. Attendance and participation is worth 10% of your final grade.

Class participation

During the first two days of class, you will get a chance to arrange yourselves in groups for the lab/discussion sections. Groups are encouraged to sit together in class, which will facilitate discussion in class. Participation in class counts for 10% of your grade, so please be present, read the assigned materials, and let's try to have a fun summer!

Notice to Students with Disabilities

The University of Oregon is working to create inclusive learning environments. If there are aspects of the instruction or design of this course that result in barriers to your participation, please let me know as early as possible, in person or via email. You may also wish to contact Accessible Education Services in 164 Oregon Hall, by phone at (541) 346-1155 or uoaec@uoregon.edu. We welcome the chance to help you learn, and will work with you to help make it a good learning opportunity and experience.

Grade Breakdown

Final..... 25%
Mid-term 15%
Group Project + Presentation ..... 15% (12% + 3%)
Aquarium report..... 10%
5 Quizzes 10%
Homework 5%
Discussion/Labs 10%
Class participation 10%
Entry Quiz (Day 1) ..... 1 point extra credit
All Assignments (on time) ..... 1 point extra credit)

Exams

Exams are worth 40% of your final grade. The final exam will be cumulative, since the teaching time is so short. Each exam will include material from the Textbook, Lectures, Discussion, Video clips, and Reading assignment (Weekly Article Report). The **midterm** will be an online exam (80 minutes) that you can take on any day between Wed (8/24) and Sat (8/27) of Week 2. There will be a short-answer part, and a long-answer part. If you want your midterm grade before Aug 29th, you must submit the test on or before Friday (8/26).

The Final will be a 2-hour, in-class exam (10:00 to 12:00 on Thu, Sep 01). Like the mid-term, there will be short-answer questions and longer answer questions. Scantron

forms will be used, so please bring a #2 pencil to the Final.

Make-up Exam Policy: Make-ups are NOT administered except in the case of a severe medical condition or other extreme documentable emergency. It is your responsibility to contact the instructor as soon as possible and to provide documentation. Make-up exams may be a different format or duration from the regular exam,

Quizzes

There will be 6 online quizzes, of which the highest scoring 5 for each student will count towards 10% of the final grade. Each quiz will be administered online via Canvas. Quiz schedule will be in the main calendar on Canvas, and in the Syllabus linked via Canvas. Quizzes will come online at 6:30 P.M., and will be available until 11:59 PM that night. You can take the quiz at any time during those 5½ hours , but remember that the 11:59 PM is the submission deadline, not the last start time. Quizzes will be Tue & Thu in Weeks 1 & 2, but Monday and Wednesday in Week 3.

Homework Assignments

Researchers evaluate information from literature and seminars on a daily basis. One cannot overemphasize the importance of analysis based on critical reading and listening skills for a successful scientist. These tools lie at the core of what we do – discover the unknown! You will write reports based on articles (4) or a podcast (1). Articles are available on-campus (or connected to campus via VPN). You must read these articles (or listen to the podcast), and **write your report** on the Article Report Sheet. Report sheets will be printed and available at the beginning of the course, and as needed. The PDF version of the Article Report Sheet is available on the Canvas site. A template for the fifth report (based on the podcast) will also be available on Canvas.

Reports must be written and turned in as a hard-copy at the start of class on the day that they are due. Electronic copies (email, upload etc) will **not** be accepted. All parts of the Article Report sheet must be filled out. For detailed instructions on Article Reports, please see the announcement on Canvas titled, ''.

Student Groups

You will need to form groups of 3-4 people each for lab sections and for your research project. Lab groups must be formed at the start of Lab-I, and are best formed by people who are sitting near each other in Discussion/Lab sessions. It may also be a good idea for you to sit near each other in class, which will facilitate discussion and class participation.

Group Project

A major component of the course will be designing, carrying out, and presenting the results of your own Group study. This Group research project will give you the opportunity to choose a species or an aspect of animal behavior that is especially interesting to you. Each research team will pick an animal (found locally) or an aspect of animal behavior of

interest, and will design an experiment to test a particular hypothesis regarding that behavior.

You are free to choose your own topic but it must be something that you can test in the available 3-week period with the resources that we have available. Each research team must meet the Instructor at the beginning of the project for advice with project ideas and experimental design. After data collection has started, you should meet the instructor again to discuss appropriate ways to analyze and present data.

At the end of week 2, each group will hand in a one-page type-written report (one per Group), and present the results of your project in a 15-minute shared presentation. You will also rate each member of your team on a scale of 1 (didn't contribute significantly) to 10 (did their share of the work), to ensure that all members carry their weight*.

Each student should start journaling about ideas immediately, and start doing reconnaissance for field sites and animals that are easy to find in the area. During the first two weeks you should occasionally discuss how your project is going with the Instructor. Since you will spend time with your group-mates in the lab and during your research project, it might be advisable for you to sit together in class – which will facilitate your interaction and help make class discussion more interesting and fruitful.

Steps towards completing your project:

1. Each team member should write a list of possible project ideas
2. Discuss among team members and choose a topic (discuss with Instructor before spending too much time on it)
3. Submit the topic Title (deadline: Fri, Aug 19th before returning from Aquarium)
4. Submit a brief written report (Deadline: start of Lecture, Mon Aug 29st)
5. Present results in class for Instructor and Peer evaluation (Mon 8/29 and Tue 8/30)

Note: Ethical and scientific rules must be followed. Project methods MUST be approved by the Instructor before you start gathering data.

Group Project Topic:

1. Submit on one page with names of all team members
2. One sentence title and a one paragraph summary describing:
    - Introductory material on your topic (you will need to research the literature and present background theory from the scientific literature).
    - Your hypotheses and predictions. What hypotheses do you plan to test? Depending on your question, you may have one hypothesis that you will test or you may have several hypotheses.
3. Must be submitted prior to the end of the aquarium trip (Friday, Aug 19)

Group Project Report: NO MORE THAN 2 PAGES

1) A **Title** for your project
2) An **Introduction** section providing:
    a) Introductory material on your topic (you will need to research the literature and present background theory from the scientific literature).
    b) Your hypotheses and predictions. What hypotheses do you plan to test? Depending on your question, you may have one hypothesis that you will test

or you may have several hypotheses.

3) A **Methods** section outlining the methods you will use. This should be detailed and written as it would be in a scientific lab report. You should also include a paragraph or two carefully explaining what data you will collect and how you will statistically analyze the data.
4) A **Results** section with your data presented in at least two ways (text and a chart or graph), plus use of one statistic to test the significance of your findings.
5) **Conclusions**: what did you discover about the animal's patterns of behavior or the occurrence
6) **List of Citations**: A literature cited section with at least 2 references
7) Must be handed in by start of class on Mon, Aug 29

Group Project Presentation

Each group will present the results of their research project during the last two Discussion sessions (on 8/29 and 8/30). Presentations should 10 minutes or less, with about 5 minutes for discussion. Project presentation will be graded by the Instructor and by your peers. Note that the final grade will be weighted by the rating given to you by your other group members (see text marked with * on last page). Presentations should be well designed, with an Introduction, Method and Results sections, and a brief Conclusion. Plan on making 3 or 4 slides, or a short video clip or two.

Discussion/Laboratory Sections

Discussion sections – some of which allow for hands-on experience in observing and analyzing animal behavior – will introduce you to methods scientists use in and out of the laboratory. These sessions will supplement classroom learning, and are an integral part of the curriculum for this course. You will be graded for participation and attendance in the Discussion sections. There are only 4 labs (Lab I through IV). During the final 2 discussion sections, you will present your group's project report (described above). The list of lab/discussion sections is provided for convenience. Due to the size of the class – each section is at maximum capacity for the room assigned to us – it is not possible to switch sections with another student, or to make up for missed labs.

Suggested sources for finding topics and information for your projects

Books:

You may need to refer to books, including the textbook, for some background information so that you will be able to understand the terminology in the journal articles.

- Animal Behavior – John Byers (required)
- Animal Behavior (John Alcock – on Library Reserve)
- Perspectives on Animal Behavior (Goodenough, McGuire, Jakob – On Library Reserve).
- Web-resource: Evolution 101 (evolution.berkeley.edu/evolibrary/article/evo_01)
- E-book: Animal Behavior: A Wikibook
- American Scientist Online

UO Library:

Search the library catalog for other animal behavior and behavioral ecology books. Also search for books providing background information on the system/species you are covering (for example if you are doing a fish foraging topic you may need to refer to a fish biology book to get background information on fish so that you can understand the terminology in the literature).

Journals: A large collection of Journals are available at the University of Oregon Libraries, both in print and online. Please remember that Online versions of journals can only be accessed while on campus, or by connecting to the UO network using VPN. Databases for a literature search: PubMed; Psychology and Behavioral Sciences Collection; BioOne. Another accessible source is Google Scholar (scholar.google.com).

Readings on Animal Behavior

	Due*	Author	Title *(links only work from uoregon.edu domain**)*
1	8/17		Tinbergen & Stickleback Mating Behavior
2	8/19	Holekamp, K	Why Male Ground Squirrels Disperse
3	8/22	Honeycutt, R	Naked Mole-Rats
4	8/24	Borgia, G	Why do Bower-Birds Build Bowers?
5	8/29	Slate	The Semenya Dilemma Edition (Hang Up & Listen, Slate Inc.) – first 21 min of podcast (0:00 to 21:10)

*Please turn in your Completed report at the start of lecture the day it's due

**Articles can only be accessed while on campus, or connected to uoregon.edu via VPN

Academic Deadlines (*official list **here***)

August 16:	Drop this course (100% refund, no W recorded)
August 17:	Last day to change to or from audit
August 17:	Drop this course (75% refund, no W recorded)
August 18:	Add this course
August 21:	Withdraw from this course (50% refund, W recorded)
August 22:	Withdraw from this course (25% refund, W recorded)
August 29:	Withdraw from this course (0% refund, W recorded)
August 29:	Change grading option for this course

Lecture Schedule

Subject to change. Depends on pace of teaching, quiz/exam performance & student feedback.

Week	Date	Venue	Lecture	Report	Quiz
1	Mon, 8/15	Lecture 1	Introduction		
	Tue, 8/16	Lecture 2	Instinctive Behavior		1
	Wed, 8/17	Lecture 3	Instinctive & Learned Behavior	#1	
	Thu, 8/18	Lecture 4	Umwelten		2
	Fri, 8/19	**AQUARIUM TRIP (compulsory)**		**#2**	
2	Mon, 8/22	Lecture 5	Inter-species Behavior	#3	
	Tue, 8/23	Lecture 6	Living in Groups		3
	Wed, 8/24	Lecture 7	Eusocial Species	#4	
	Thu, 8/25	Lecture 8	Kin Selection		4
	Sat, 8/27	**MIDTERM DUE at 11:59 PM (Exam on Canvas)**			
3	Mon 8/29	Lecture 9	Sexual Selection		5
	Tue, 8/30	Lecture 10	Mating Behavior	#5	
	Wed, 8/31	Lecture 11	Sex & Human Behavior		6
	Thu, 9/1	**FINAL**	**(In-class exam)**		

NOTE: There will be a Finals review on Wed, Aug 31, during Lab/Discussion hours.

Laboratory/Discussion Section Schedule (Huestis 130)

Day	Date	#	Content
M	8/15	I	Hypotheses, Data, & Science; Designing Projects
T	8/16	I	Hypotheses, Data, & Science; Designing Projects
W	8/17	II	Hermit Crab Lab - Ethograms
R	8/18	II	Hermit Crab Lab - Ethograms
M	8/22	III	Fruit flies and Sensory behavior
T	8/23	III	Fruit flies and Sensory Behavior
W	8/24	IV	Human Mate Selection Discussion
R	8/25	IV	Human Mate Selection Discussion
M	8/29	Talks	Project Report – Presentation Section 40349
T	8/30	Talks	Project Report – Presentation Section 40349
W	8/31	Review	Review Session for Final