

Biology 382: Animal Behavior, SPRING 2023, Section 002

Lectures: Monday & Thursday – 4:00pm – 5:20pm; NJIT CKB G-08

Pre-requisite: Foundations of Ecology and Evolution (BIOLOGY 205 & 206)

Instructor: Dr. Caroline DeVan (Preferred pronouns: She/Her/Hers)

Email: caroline.m.devan@njit.edu,

Office phone: 973-596-5404 (if Bio Office is closed, dial 5404 from courtesy phone by elevator)

Office: NJIT CKB 340F - in the NJIT Biology Office suite

Office Hours: Monday & Tuesday 11:30am – 1:00pm and by appointment - in office or online via zoom (links posted to canvas)

Emergency Phone: 973-596-3111 – Public Safety (Non-emergency: 973-596-3120)

NJIT Campus Map: www.njit.edu/about/visit/njit-maps.php

Course Description: The objective of this course is to expose students to the broad field of animal behavior. The course will include the historical underpinnings of the field as well as the contemporary theories for a wide variety of behaviors. Behavioral ecology and the evolution of animal behaviors as adaptations will be intertwined throughout the course, as well potential applications of knowledge about animal behavior. Students will be able to analyze evidence and investigate modern practices in order to evaluate existing theories and consider potential future directions of animal behavior. Using current scientific literature, as well as case-studies, students will be able to come up with their own hypotheses and determine how different hypotheses related to animal behavior can be tested experimentally.

Course-Level Learning Outcomes:

By the end of this course, students are able to:

1. Distinguish between the four major categories (mechanism, ontogeny, adaptive value, and phylogeny) of explanations for animal behavior
2. Explain how behavioral hypotheses are created and formulate hypotheses that explain a given behavior
3. Explain the procedures used to test these hypotheses and the types of data that can be used when testing hypotheses
4. Understand the role of natural and sexual selection in the evolution of behavior
5. Understand the ecological context of an animal's behavioral sequence
6. Understand some of the mechanisms involved in the production of a behavioral sequence by an animal
7. Explain how animal behavior can be used to understand human behavior.

Required Course Materials:

- **iClicker:** An iClicker is required for this course. I use iClickers to determine participation and attendance (see Course Assessments below). The **iClicker REEF** app is required for this course: <http://iclicker2.wpengine.com/students/apps-and-remotes/apps>.

- **Textbook:** *Principles of Animal Behavior (4th edition)* by Lee Alan Dugatkin (ISBN-13: 978-0-226-44838-1). This textbook will be the starting point for all class materials and I will add additional materials to the course website. It can be purchased at the NJIT bookstore (<https://www.bkstr.com/njitstore/home>) or online (<https://press.uchicago.edu/ucp/books/book/chicago/P/bo34250496.html>). You can use a hardback, a paperback or eBook. You can also use an earlier edition of the textbook, just be aware that some of the information may have changed and you should consult with me as needed. I will also place a copy of 3rd edition of the book on reserve at NJIT Library: <https://library.njit.edu>.
- **Website:** <http://canvas.njit.edu/>, login with your NJIT UCID. **Canvas will automatically assign your email as your NJIT e-mail address and this will be where all messages sent through Canvas will go.** You can try to change your contact information on Canvas, but you should also make sure you forward your NJIT email to your preferred email (directions on Canvas).
- **Technology Requirements:** The semester is starting with classes held synchronously online, while online, you will need a computer with webcam & internet. When classes move to in-person instruction you may also need a laptop or tablet for class work. You will also need access to Microsoft Office Suite (or similar) for data analysis. NJIT provides free access to students - <http://ist.njit.edu/software-available-download/>.
- **Note-taking Materials:** You should bring materials to take notes to every class meeting. Handwriting notes is recommended.

Communication with instructor

- **In-person communication during class and office hours and Canvas message app are the preferred forms of communication.** If you do talk to me before/during/after class asking me to do a task, please send a follow-up email through the Canvas message app. You can email me directly as well, but I may respond more slowly. When emailing me through the Canvas app or directly please indicate your full name and the course you are in as part of the email subject line. I will be checking the Canvas messaging app and my email regularly throughout the work week during normal business hours. Outside of these times I will respond to messages and emails as soon as possible, but do not expect an immediate reply.
- **Office hours:** Office hours are open times when you can come discuss with me any questions or concerns you have about the course or course material. Office hours will be held each week at the regularly scheduled times. You can visit my office or attend via Zoom – use the Office Hours Zoom link posted to canvas. You DO NOT need an appointment to attend office hours. If you are attending online you may need to get my attention when you show up so I know you are there.
- **Appointments:** I am always happy to make an appointment with a student. Ideally appointments should be made in advance. To schedule an appointment, you should message me through the Canvas app – be sure to include your name, the class you are in, and the times you are available to meet in your message. Appointments can be in person or via Zoom – please indicate your preference.

Grades and Assessments:

Course Grade: Grades will be determined by the percentage of the total possible points earned, following the standard grade scale to the right. Grades are not curved. No individual extra credit opportunities will be available, but an extra credit assignment may be available for the whole class.

Letter Grade	Percentage
A	90 – 100
B+	85 – 90
B	80 – 85
C+	75 – 80
C	70 – 75
D	55 – 70
F	0 – 55

Your grade for this course will be based on the components in the table below. You can choose some aspects of how your grade is calculated by determining the weight of each component as a percentage of your total semester grade, within the given ranges. Your final grade will be the highest of the two possible grades: the grade that results from your selected weight (your %) or the one resulting from the standard weight (standard %). You will select your % in the middle of the semester. Standard calculations for each assessment are described below and will be posted to Canvas so you can keep track of your progress in the course.

Grading Points

Grades	% Range	Standard %	Your %
Participation & Class Work (15 pts)	4-6%	5%	
Homework & Discussions (55 pts)	15-21%	18.3%	
Research Project & Presentation (55 pts)	15-21%	18.3%	
Midterm Exams (2 exams, 50 pts each = 100 pts)	25-40%	33.4%	
Final Exam (cumulative) (75 pts)	20-30%	25%	
Total = 300 points	100%	100%	

- *Participation.* Participation points are earned during class by answering iClicker questions (some must be answered correctly, but not all), completing in-class assignments, and participation in class discussions. There will be 3-7 iClicker questions per lecture. If you gain 80% of the available points you will receive full credit (15 points). This cut-off will compensate for ~3 missed classes or should you experience technological issues.
- *Homework.* You will have approximately one assignment per week. These assignments may be discussion assignments (see below) or they may involve doing research on a chosen study species – the results of which you will then share with your classmates. This category is worth 55 points, the lowest assignment grade will be dropped.
 - *Discussions* For each of the three units in the course there will be two discussion papers - a total of 6 papers. For each paper you will complete a Hypothes.is (a social annotation tool) assignment on canvas. Then once a semester you will be the discussion leader for your group which will require you to review the paper with your classmates and then facilitate a discussion of the paper using questions that you came up with. These discussion papers will be used as the basis of each exam.

- *Research Project.* You will work individually or in pairs to complete a small research project based on observing animal behavior. There will be several smaller assignments to guide you through the process. Then your research will be presented to your classmates in a scientific poster session. Part of your grade will be a peer and self-assessment. All components of the project together will be worth 55 points.
- *Exams.* There will be two midterm exams during the semester, each worth 50 points. Each exam will primarily focus on a specific unit of material but each consecutive exam will build on knowledge from previous units. The final exam will be worth 75 points and will be during the final exam period. It will be cumulative. Further details about exams will be communicated with you in advance in class and through emails. Details will also be posted to Canvas. All exams will include questions applying class content to the discussion papers.

Make Up Exams & Late Work: Exams and poster presentations cannot be made up without documentation of an excusable absence from the [NJIT Office of the Dean of Students](#). Late work for other assignments is accepted with a 10% deduction per day.

Course Policies:

This course is offered in the Face-to-Face Instructional Delivery Mode. All students are expected to follow NJIT's COVID-19 guidelines: please see NJIT's Pandemic Recovery Plan for more information and updates: <https://www.njit.edu/pandemicrecovery/>.

- **Sharing Materials:** All course materials (including recordings of lectures) are for students' own use only (no sharing or posting anywhere). See the NJIT Policy for Recording Classes (<https://www.njit.edu/provost/policies-procedures>).
- **Technology policy:** Cell phones and computers are allowed in the classroom to facilitate note-taking and for use with clickers but all ringtones should be silenced. Everyone should refrain from using your devices for non-class related purposes. If they become a distraction you will be asked to put them away. To minimize distractions, I recommend turning off all notifications or using airplane mode while in class. If you must answer a phone call, step outside the classroom or mute yourself *before* answering.
- **Academic Dishonesty:** Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: <http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>. Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu.

Student Services and Inclusion Statement

Accessibility Statement: Please let me know if you need accommodations for a disability. If you are an NJIT student in need of accommodations due to a disability please contact the Office of Accessibility Resources & Services (OARS), to discuss your specific needs:

<https://www.njit.edu/studentsuccess/accessibility>. Rutgers students should coordinate accommodations through their Disability Services department:

<https://studentaffairs.newark.rutgers.edu/health-wellness/disability-services>.

NJIT Non-discrimination Policy New Jersey Institute of Technology reaffirms its commitment to a policy of non-discrimination on the basis of race, sex, sexual orientation, age, religion, ethnic origin, handicap or veterans' status in its employment policies, educational programs and activities under university control.

In this course, each person in the class is an integral part of the course and has something of value to contribute. I strive to promote an inclusive environment in my class and I expect all participants in the class to be respectful of others' perspectives and opinions whenever engaging in the course.

Mental, emotional and physical health can have a large impact on learning and so I also strongly encourage students to utilize all campus resources as needed. I am here to help facilitate your learning and so please let me know about course concerns as soon as possible so I can help resolve them.

Please see the last page of this syllabus for student support services available at NJIT. Similar resources are available at Rutgers-Newark. I can help you find them if needed.

How to Succeed in this Course:

- Attend all classes and engage fully while in class (both in-person and online) – this includes participation via iClickers during the lecture and also working with your peers during group and class discussions.
- Preview course material before class begins and review course material after class for at least 5 minutes each. Previewing can include skimming the posted readings and pre-class slides. Reviewing includes writing down 3-5 take-home messages from the day's class and any questions you have.
- Ask questions – during class, in office hours, online. When students ask questions it not only helps the student, it guides my instruction.
- Study on your own or with peers outside of class. Read the textbook. Test yourself on the material.
- Complete all assignments thoroughly and on time.
- Engage thoroughly with the discussion papers – both on your own and with your peers. These papers will be used in the exams – so think about how course topics and concepts can be broadly applied to these papers.

For more advice and information on how to best succeed in this course, please see the Canvas section titled “Study Support” where more advice is posted and there are many different resources and tips to increase your learning! You can also talk with me directly. **I am here to help and I am looking forward to working with you**

The below schedule is tentative and may change, changes will be posted to Canvas.

WEEK #	DATE	MEETING TOPIC	READINGS *& ASSIGNMENTS**
1	R – 1/19	Course & Content Introduction	Syllabus
2	M – 1/23	Introduction to Animal Behavior, History & Bias in Ethology	Chapters 1 & 2
	R – 1/26	Evolution of Behavior (Reading Scientific Papers Workshop)	
3	M – 1/30	Methods of the Study of Behavior – Introduction to Research Project	Chapter 3
	R – 2/2	Hormones & Neurobiology	
4	M – 2/6	Molecular Genetics & Development	Chapter 4, Discussion #1 Paper
	R – 2/9	DISCUSSION 1 & Group Work	
5	M – 2/13	Learning	Chapters 5 & 6
	R – 2/16	Cultural Transmission	
6	M – 2/20	DISCUSSION 2 & Group Work	Discussion #2 Paper
	R – 2/23	Research Project Work – ATTENDANCE MANDATORY	
7	M – 2/27	Exam 1 (Weeks 1-6)	Chapter 8
	R – 3/2	Sexual Selection	
8	M – 3/6	DISCUSSION 3 & Group Work	Chapter 8, Discussion #3 Paper
	R – 3/9	Mating Systems	
9	3/13 – 3/17	Spring Break – No Class	
10	M – 3/20	Kinship	Chapter 9 Research Posters due 3/9
	R – 3/23	Research Presentations – ATTENDANCE MANDATORY	
11	M – 3/27	DISCUSSION 4 & Group Work	Chapter 10, Discussion #4 Paper
	R – 3/30	Cooperation	
12	M – 4/3	Foraging	Chapter 11 & 12
	R – 4/6	Antipredation Behavior	
13	M – 4/10	Exam 2 (Week 7 – 11)	Chapter 14
	R – 4/13	Habitat Selection, Territories & Migration	

14	M – 4/17	DISCUSSION 5 & Group Work	Chapter 13, Discussion #5 Paper
	R – 4/20	Communication	
15	M – 4/24	Aggression & Play	Chapters 15 & 16, Discussion #6 Paper
	R - 4/27	DISCUSSION 6 & Group Work	
16	M – 5/1	Animal Personalities & Intelligence	Chapter 17
17	5/5 – 5/11	Cumulative Final Exam ***	

* Chapters refer to Principles of Animal Behavior, 4th edition by Lee Alan Dugatkin (3rd edition topics are in the same order)

** All weekly assignments will be due by 11:59pm Sundays.

*** Final Exam will be during the final exam period which is May 5-11. Do not make travel plans until the final exam schedule is posted. The final exam schedule will be posted here:

<http://www.njit.edu/registrar/exams/>

Your classroom as well as your college experience is meant to be a place where the free flow of ideas is encouraged and nurtured. It is not acceptable for any community member to make hurtful and demeaning remarks, or otherwise disrupt your learning experiences or your safety. As such, there are many NJIT support systems and policies of which you should be aware.

<p>Basic Needs</p> <p>Students who face challenges securing their food or a safe and stable place to stay are urged to contact the Dean of Students (dos@njit.edu). If you are comfortable doing so, please notify me as well.</p> <p><u>Food Insecurity</u>: If you are experiencing food insecurity, there is a food pantry on campus for your convenience (You must bring your UCID). Campus Center, Room 478 foodpantry@njit.edu See website for updated hours: https://www.njit.edu/foodpantry/hours-and-general-information</p>	<p>Emergency Support</p> <p><u>Crises Happen</u>: If you experience a life emergency and are unsure which support services to turn to, NJIT Public Safety can connect you to emergency support systems - call 973.596.3111.</p> <p>For medical, psychological or psychiatric emergencies you can also call: University Hospital Crisis 973.623.2323</p> <p>If you want to report a concern about another students' well-being you can also reach out to the NJIT CARE Team (https://www.njit.edu/care/) or the Dean of Students Office.</p>	<p>Mental Health and Stress Management</p> <p>Center for Counseling and Psychological Services (C-CAPS) is committed to advancing the mental health and wellbeing of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. https://www.njit.edu/counseling/gethelp</p> <p>Diminished mental health, including significant stress, mood changes, excessive worry, or problems with eating and/or sleeping can interfere with optimal academic performance. The source of symptoms might be related to your course work; if so, please speak with me. However, problems with relationships, family worries, loss, or a personal struggle or crisis can also contribute to decreased academic performance. Please seek out help as needed.</p> <p>Campbell Hall, Room 205 (Main Level) 973.596.3414</p>
<p>Student Parents</p> <p>If circumstances arise that necessitate your absence from class - such as the illness of a child, closing of day care for inclement weather, etc. - please contact me as soon as possible so we may make arrangements to keep you up-to-date with course material and activities. If you should need any other kind of assistance for circumstances relating to your status as a student and parent, please consider contacting the Dean of Students and Campus Life at 973.596.3466 for a referral to appropriate services including on and off campus support.</p>	<p>Consensual, Healthy Personal & Professional Relationships</p> <p>Your body is your own and NJIT strives to protect its community members from any unwanted advances. Title IX prohibits discrimination based on sex, including harassment, domestic and dating violence, sexual assault, and stalking. Sexual violence undermines students' academic success. Anyone dealing with sexual misconduct should consider talking to someone about their experience, so he/she/they can get the support needed.</p> <p>Confidential Resource:</p> <ul style="list-style-type: none"> • <u>Center for Counseling and Psychological Services (C-CAPS)</u> Campbell Hall, Room 205 (Main Level) 973.596.3414 <p>Non-Confidential Resources:</p> <ul style="list-style-type: none"> • <u>NJIT Public Safety</u> 973.596.3111 • <u>Dean of Students Office</u>, 255 Campus Center 973.596.3466 	<p>Special Accommodations</p> <p>If you have a disability or a personal circumstance that will affect your learning in this course, please let me know as soon as possible so that we can discuss the best ways to meet your needs. Any student who needs accommodation for disabilities should also contact the Office of Accessibility Resources and Services (OARS): https://www.njit.edu/studentssuccess/accessibility</p> <p>Kupfrian Hall, Room 201973.596.5417 oars@njit.edu</p> <p>Religious/Cultural Observance Students who have religious or cultural observances that coincide with this class should let me know by email within the first two weeks of class. I strongly encourage you to honor your cultural and religious holidays! However, if I do not hear from you within the first two weeks, I will assume that you plan to attend all class meetings.</p> <p>Supporting Academic Integrity Our community functions best when its members treat one another with honesty, fairness, respect, and trust. The college promotes the assumption of personal responsibility and integrity, and prohibits all forms of academic dishonesty and misconduct.</p> <p>Issues of Concern (Non-Emergency)</p> <p>Alert the Dean of Students Office (dos@njit.edu) about issues of concern, including academic and non-academic violations (https://www5.njit.edu/doss/reporting/).</p>