

Evolutionary Animal Behavior Laboratory: BIOLOGY 484, FALL 2022

Class Meeting Time: Tuesday: 1:00pm – 5:20pm; Central King Building 328

Prerequisites: Foundations of Ecology and Evolution Lecture and Lab (BIOL 205 & 206)

Instructor: Dr. Caroline DeVan

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 (or can meet online via Webex)

Office Hours: Wed 11:30am - 1:00pm & Thurs 12:00pm – 1:30pm; OR by appointment

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

Course Description: This is a research based course focused on designing and conducting experiments in animal behavior. Students will gain experience with experimental design, and all labs will be inquiry based with students designing experiments to test hypotheses. Topics in animal behavior that will be explored include: foraging, predator avoidance, animal movement, altruism and human evolution.

Mode of Instruction: 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/>.

Website: <http://canvas.njit.edu/>, login with your NJIT UCID.

Course-Level Learning Outcomes:

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

1. Describe and analyze animal behavior using principles of evolutionary biology
2. Use observation and experiments to investigate animal behavior
3. Use quantitative methods to describe and analyze data
4. Locate and evaluate scientific literature
5. Communicate science in both written and oral formats
6. Work in groups to design, conduct and interpret scientific studies

Course Policies:

COVID-19 Safety Requirements: All persons physically present in any department facility or classroom shall comply fully with the NJIT COVID-19 safety policy at all times. When a mask mandate is in place, masks must be worn before entry to all department facilities, and social distancing guidelines must be followed. Individuals who are unable to wear a face mask due to medical reasons should contact the Office of Disability Services or Human Resources. Students with obvious symptoms of respiratory illness should not come to campus and will be asked to leave. Students who do not comply with a request by a department instructor to adjust their behavior, in accordance with the University Policy, will be subject to disciplinary actions. Instructors have the right to expel the student or terminate the class session at which any student fails to comply with the University Policy.

Sharing Materials: All course materials (including recordings of lectures) are for students' own use only (no sharing or posting anywhere).

Technology policy: Cell phones and computers are allowed in the classroom to facilitate note-taking and to complete labs - but all alerts/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 *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.

Required Course Materials:

Research notebook (physical or digital) – something you can use outside and take to the field with you.

Laptop or tablet. Some classes will require the use of a laptop or tablet. There are classroom computers for use as well.

Grades and Assessments:

Grading Policy: Grades will be determined by performance on the assessments found in the table below. More detailed descriptions of each assessment follow the table.

Assessments	Total Points
Post Lab Assignments (90 points) + Group Evaluation (10 points)	100
Independent Research Project & Formal Lab Report	130
Final Exam	70
Total	300

Assessment Descriptions:

Post-Lab Assignments: For each of the labs you will complete a post-lab assignment which will require additional analysis and discussion of results. Together the post-lab points will scale to 90 points. Many labs will be completed in groups and at the end of the semester you will complete

an evaluation of your peers. This evaluation will be worth 10 additional points and your score will be an average of your groupmates evaluation of you.

Independent Research Project & Formal Lab Report: Students will design and implement an independent research project on animal behavior. This project will require the development of a research question and project approval by the instructor (project approval form = 10 points). You will also do some background research using the scientific literature (annotated bibliography = 20 points). Students will write a project proposal (25 points) and they will have one class period to complete their research. After implementation of the research project, students will analyze their data. Then they will write up a formal lab report describing their project and its results (50 points). Both the project proposal and formal lab report will require drafts to be submitted (10% of grade for each) and students will receive feedback on these drafts before submitting the final documents. Students will also share their results with their peers in a presentation (20 points) and will provide feedback on the presentations of their peers (5 points).

Final Exam: Students will complete a final exam that will focus primarily on the content and skills practiced throughout the semester. Further details about the exam will be communicated with you in advance in class and through emails. Details will also be posted to Canvas.

Your final grade will be determined by dividing the points you have earned by the total points shown in the table above and applying it to the grading scale found in the table above. Your grades will be posted to the course website so you can keep track of your progress in the course.

Letter Grade	Percentage
A	90 – 100
B+	85 – 90
B	80 – 85
C+	75 – 80
C	70– 75
D	60-70
F	0 – 60

Make Up Exams & Late Work: Exams cannot be completed late without documentation of an excusable absence from the [Office of the Dean of Students](#). Late work is accepted with a 10% deduction per day.

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 WebEx – use the Office Hours WebEx 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. All appointments will meet via WebEx unless other arrangements are made.

Student Services and Inclusion Statement

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 classes 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.

Note: this is a tentative schedule, any changes will be posted to course website. *Red indicates an assignment that is part of your Independent Project.*

DATE	TOPICS	READINGS AND/OR ASSIGNMENTS
Sept 6	Introduction to Animal Behavior Lab 1: Making Scientific Observations (Field Trip: Branch Brook Park)	Syllabus
Sept 13	Lab 2: Squirrel Behavior Part 1 Workshop: Finding, Reading & Citing Primary Literature	Post Lab 1
Sept 20	Lab 3: Behavior of Animals in Captivity (Field Trip: Turtle Back Zoo)	Primary Literature Assignment
Sept 27	Lab 4: Describing & Analyzing Behavior (Field Trip: Sandy Hook)	Post Lab 3
Oct 4	Analysis for 4 Independent Project Development Workshop: Hypothesis Development & Writing Scientific Proposals Submit Independent Project Approval Form in class	Independent Project Research Ideas Annotated Bibliography
Oct 11	Lab 5: Pollination (Optimal Foraging) Lab 2: Squirrel Behavior Part 2 (Field Trip: South Mountain Reservation)	Post Lab 4 Draft of Project Proposal (for independent Project) due Sunday Oct 9 @ 11:59pm
Oct 18	Analysis for Lab 2 Lab 6: Testing Anti-Predation Behavior of Caterpillars Workshop: Experimental Design & Statistics Individual Meetings @ Project Proposals	Post Lab 5
Oct 25	Lab 6: Testing Anti-Predation Behavior of Caterpillars (continued) Lab 7: Evolution/Phylogeny of Animal Behavior	Post Lab 2 Final Project Proposal Due
Nov 1	Independent Project (Field Trip: Turtle Back Zoo) Independent Project Data Collection	Post Lab 6
Nov 8	Analysis Independent Project Workshop: Formal Lab Report Writing Seminar Prepare for Lab 8	Post Lab 7
Nov 15	Lab 8: Vigilance & Group Size Individual Meetings @ Lab Report	Draft of Formal Lab Report (on Independent Project) due Sunday Nov 13 @ 11:59pm
Nov 22	Thursday schedule – No Class! Happy Thanksgiving!	
Nov 29	Analysis of Lab 8 Lab 9: Altruism	
Dec 6	Independent Project Poster Session	Post Labs 8 & 9 Poster Presentations on Independent Project
Dec 16-22*	Final Exams – TBD – find schedule: https://www5.njit.edu/registrar/exams/finalexams.php	Final Formal Lab Report due Wed Dec 14 @ 11:59pm

**All assignments are due at Monday night at 11:59pm unless otherwise noted.
All labs take place on NJIT campus unless otherwise indicated.**

*Avoid scheduling any travel or other events during this time period. The exact dates will be announced during the semester. Final exams can ONLY be rescheduled for other exam conflicts.

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"> • Center for Counseling and Psychological Services (C-CAPS) Campbell Hall, Room 205 (Main Level) 973.596.3414 <p>Non-Confidential Resources:</p> <ul style="list-style-type: none"> • NJIT Public Safety 973.596.3111 • Dean of Students Office, 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>