BIO 328: Ornithology – The Life of Birds

Syllabus – Fall 2024

COURSE SCHEDULE:	M: 1:00 – 5:20PM
ROOM:	328 CKB
INSTRUCTOR:	Professor Daniel E. Bunker (dbunker@njit.edu)
OFFICE HOURS:	W: 10 am - 12 pm or by appointment
OFFICE LOCATION:	Zoom only – see Canvas
COURSE WEBSITE:	NJIT Canvas (https://canvas.njit.edu/)

Course summary: Ornithology is the study of birds and bird biology. Topics include: bird observation and identification, evolutionary origins and biodiversity, form and function, behavior, reproduction, ecology, and conservation. This field/lab course will include numerous field trips to natural areas in New Jersey. Students will learn how to keep a field journal and use online resources such as Merlin, eBird, and iNaturalist. Students will understand and use the scientific method to develop scientific knowledge.

Learning Outcomes

Upon successful completion of this course, students will accomplish the following objectives:

- Students will be able to identify a wide variety of bird species in the wild.
- Students will be able to use a variety of electronic tools to identify and record bird observations.
- Students will understand the evolutionary history of birds.
- Students will understand the form and function of birds.
- Students will understand the behavioral and reproductive aspects of bird biology.
- Students will understand the ecology and conservation of birds.
- Students will be able to conduct independent research on bird biology.
- Students will develop their critical thinking and communications skills.
- Students will develop their ability to make scientific observations and generate hypotheses about natural phenomena.
- Students will apply the scientific method to develop a research proposal to address a question of their choosing related to bird biology.
- Students will present a research proposal both orally and in writing.

Course prerequisites: Bio 205, Foundations of Ecology and Evolution

Course expectations

1. **Bio 328 is a FIELD COURSE**. This means that it counts as a lab course. But the field is not the lab. The field is OUTSIDE! The birds that we will be observing spend their entire lives outside. As such, we will be OUTSIDE EVERY DAY! So come prepared!
    a. **Weather**. We will be outside, every day, even when it is 95 degrees and swelteringly humid. We will be outside in the rain. We may even be

outside in the snow. Check the weather before coming to class. Bring appropriate gear for the weather, keeping in mind bugs, see below.

b. **Bugs**. We will experience bugs when we go to the field. You will be bitten by mosquitos. But more importantly we may be in sites where there are ticks, and in particular *Ixodes scapularis,* commonly known as the deer tick or black-legged tick. These ticks may carry Lyme disease, which you don't want to get and should take care to avoid. You should review the CDC guidance to prevent tick bites: https://www.cdc.gov/lyme/prev/on_people.html. Consider purchasing some long pants (and possibly a shirt, socks, and gaiters) that have been treated with permethrin (www.insectshield.com; https://www.rei.com/search?q=bugsaway).

c. **Gear**. You'll generally want to wear long pants, sturdy shoes, a long sleeve shirt and possibly a short sleeve shirt depending on the weather. You may want to bring some bug spray. You may want to bring sunscreen.

d. **Binoculars.** The course will provide binoculars for you to use for the semester if you do not have your own. You will need to sign them out and take good care of them. You must return them at the end of the semester, or you receive a grade of 'Incomplete' until you do so.

2. **VANS**. We will travel together in a van almost every week. If a campus mask mandate is in place, everyone will be required to wear a mask while in the van. Make sure you are comfortable with traveling this way in fairly cozy conditions with your fellow students. Once we are outdoors, I do not require mask wearing, though you are free to do so if you prefer. If you will not be comfortable riding in a van for an hour or two every class, then this course is not for you.
3. **WALKING**. We will walk a lot in this course. In the heat. In the rain. In the snow. With the bugs. If you don't want to walk a lot, this course might not be for you.
4. **ATTENDANCE**.
    a. Attendance is required.
    b. In a lab/field course we learn by doing, and you cannot do, and thus learn, if you are not in class. Field activities, including on-campus activities, are required and cannot be made up. (Obviously I cannot repeat these activities every time a student fails to come to class.)
    c. When you signed up for this course you agreed to come to class at the scheduled time, Mondays, 1-5:20 pm. If there are class meetings that you will not be able to attend, for whatever reason, consider dropping this course or accept that you will lose points if you cannot attend class at the scheduled time.
    d. That said, I understand that life happens. Therefore I drop one quiz, one participation grade, and one field observation grade. But if you miss additional classes or other activities, you will lose points that cannot be recovered, no matter what excuse you have.
    e. Your Research Proposal presentation and the practical exam occur on the last two days of class, respectively, and cannot be made up.

f. If you miss an exam for unforeseen circumstances, plead your case to the Dean of Students, but be sure to tell them that you have already agreed to the above expectations.

5. **ARRIVE ON TIME**. We will have regular field trips, and we will need to leave on time. If you are late, you will miss the field trip, and thus miss class, and thus lose points. Please come to class on time.
6. **ACADEMIC INTEGRITY**. I expect all of you to hold yourself to the highest standards of academic integrity.
    a. When you cheat, you bring shame and dishonor and yourself, your family, and your community, including the NJIT community.
    b. If NJIT becomes known for cheaters, then your degree will be worthless.
    c. In my courses I will not tolerate cheating of any kind.
    d. If you do cheat, I will catch you, and your dreams of medical/dental/vet/grad/etc school will be shattered. Don't do that to yourself. Just do the work, and earn your grade.
    e. If you feel you will need to cheat to get a good grade in this course, please drop this course now.

Materials:

1. REQUIRED: The Sibley Field Guide to Birds of Eastern North America: 2nd Edition, Paperback, 2016 by David Allen Sibley. Available at the NJIT bookstore or Amazon, etc.
2. OPTIONAL: Handbook of Bird Biology (Cornell Lab of Ornithology) 3rd Edition by John W. Fitzpatrick (Editor), Irby J. Lovette (Editor). Available at Amazon. etc. Also available as an e-book.
3. Pocket field notebook

Grading:

Participation	20%
Field observations and notes	20%
Quizzes and exams	30%
Research Proposal presentation	10%
Research Proposal monograph	20%

Grading scale:

A	90-100	C	70-77
B+	87-90	D	60-70
B	80-87	F	0-60
C+	77-80		

Course Web page: Canvas (https://canvas.njit.edu).
We will use Canvas for coursework submission, for announcements, and for various activities. If you have not used NJIT canvas before, go here <https://ist.njit.edu/ucid/>, or call the NJIT helpdesk for assistance (973-596-2900). Be sure to check your NJIT email or set it to forward to your everyday email account. Check Canvas regularly for assignments, quizzes, announcements, etc. Your course grades can be found on canvas as well.

Disability accommodations:
If you need accommodations due to a disability please contact the Office of Accessibility Resources and Services to discuss your specific needs. A Letter of Accommodation Eligibility from the Disability Support Services office authorizing your accommodations will be required.

AI policy:
The use of AI tools to complete this course's assignments is prohibited and considered cheating. If you are unsure whether a tool is considered 'AI' in this context, just ask.

Academic Integrity:
"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"*

Cellular Phones: While you may use your phones to record scientific observations in the field, please no noodling.

Key Dates:

Sept. 9:	First day of class for Ornithology
Sept. 9:	Last day to add/drop.
Sept. 9:	Last day to withdraw with 100% refund
Sept. 16:	Last day to withdraw with 90% refund
Sept. 30:	Last day to withdraw with 50% refund
Oct. 21:	Exam 1
Oct. 21:	Last day to withdraw with 25% refund
Nov. 11:	Last day to withdraw.
Dec. 2:	Research Proposal presentations
Dec. 9:	Last day of class
Dec. 9:	Research Proposals due
Dec. 9:	Exam 2

Tentative course outline – field trips may change depending on weather

Week	Topic/Activity	Field trip
Week 1 Sept 9	Topics: What are birds? Intro to Bird ID Avian research: The scientific method, scientific literature, research proposal. Activities: Overview of field guides, equipment checkout. Bird observations and note taking on campus.	On campus
Week 2 Sept 16	Topic: Observing Birds	Montclair Hawkwatch or Sandy Hook
Week 3 Sept 23	Topic: Bird families	Montclair Hawkwatch or Sandy Hook
Week 4 Sept 30	Topic: Avian evolution and diversity Topic: iNaturalist, eBird, Merlin	Lincoln Park
Week 5 Oct 7	Topic: Flight Due date: Research Proposal draft 1	Great Swamp
Week 6 Oct 14	Topic: Migration	Caven Point
Week 7 Oct 21	Exam 1	DeKorte Park
Week 8 Oct 28	Due date: Research Proposal draft 2 Activity: Research Proposal feedback - Individual meetings - sign up for a timeslot	Proposal feedback (online only)
Week 9 Nov 4	Topic: Feeding ecology	Bayonne Waterfront
Week 10 Nov 11	Topic: Reproduction, sexual selection, and breeding systems Due date: Research Proposal Presentation Draft 1	???
Week 11 Nov 18	Topic: Conservation	???
Week 12 Nov 25	Activity: Bird population data day! (online on Zoom)	Data Day (online only)
Week 13 Dec 2	Research Proposal Presentations (20 min each)	
Week 14 Dec 9	EXAM 2 Due date: Research Proposal Final Draft Presentation Awards!	