

Biology 305: Biological Conservation (4cr)
Monday & Wednesday 12:30-1:45 ISC 137
Lab Monday 2:00-4:50 ISC 105
FALL 2023

Instructor: Kristina Hannam, Ph.D. (she/her/hers)

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Office Hours : Tues, Weds & Thurs 2:00-3:00pm in ISC 259; or by appointment

Walk with Me appointment: [sign up on Google Calendar](#) to walk and talk Tues or Thurs
1:30-2:00

Text: Our text is the open access textbook:

Sodhi & Ehrlich 2010 Conservation Biology for All, Oxford University Press

You can access [a free .pdf version of the textbook](#) from the Society for Conservation

Biology

Plus additional readings posted on Brightspace & Google Drive

Learning Outcomes:

Upon completion of this course students will:

1. Describe spatial distribution of biodiversity, the human threats to biodiversity and how these interact with population/community dynamics to enhance the threat of extinction.
2. Explain the theories/ideas that underlie selected current conservation and management practices in North America and around the world, and recognize the complexity that different social/cultural priorities add to conservation issues
3. Apply understanding of threats to biodiversity and conservation theory to develop conservation plans to selected problems in case studies.
4. Evaluate, discuss, and critique articles on conservation topics by developing questions and actively participating in evaluations of selected articles in class.
5. Create a written research proposal by identifying a question or problem, selecting appropriate background sources, and developing appropriate tests or management plans. Students will also critically evaluate the proposals of other students.
6. Cooperate with classmates in an applied conservation project at an off-campus site. Students will participate in collection of field data, analysis and report preparation. Students should expect to work independently or in small groups, and engage in professional interaction with and reporting to representatives of local conservation organizations (eg. DEC, NY State Parks, Land Trusts). This will provide students the opportunity to fulfill the IAL requirements of: Integrating multiple bodies of knowledge with their personal experience by asking meaningful questions about real-world problems. Applying skills, theories, and methods gained in academic study, professional experiences, and/or co-curricular experiences to new situations. And Reflecting upon changes in their learning and outlook over time, and integrate into their future endeavors based on that self-reflection

Semester Schedule:

Conservation Biology Schedule:

Generally: Mondays class meetings have lectures; Wednesday meetings have case studies/activities and journal discussions. Topics for each week align with the textbook chapters associated with the focus for that week. Specific reading assignments will be posted weekly on Brightspace.

Week 1: (Aug 28): A History of Conservation Biology & Ways of Knowing

Lab: Field Journaling

Week 2: – No class/Lab meeting Monday

Week 3: GVC and our Service Learning Project + Describing Biodiversity

Lab: Initial Field Visit with Nature Journaling and Data Collection Techniques

Week 4: Biodiversity: How much is there? Where is it found? What is its History?

Lab: Service Learning Site Visit

Week 5: Biodiversity (Con't) + Ecosystem Services

Lab: Service Learning Site Visit

Week 6: Habitat Destruction

Lab: Service Learning Site Visit

Week 7 – No class/Lab meeting Monday (FALL BREAK)

Week 8 (Oct 16): Habitat Fragmentation, Destruction, Degradation (Lago Guri case study)

Lab: Trip to Geneva, NY USDA ARS Lab

Week 9: Habitat Fragmentation, Destruction, Degradation

Lab: Nature Journal Reviews & Feedback + Research Proposal Writing

Week 10: Overharvesting & Invasive Species

Lab: Service Learning Project Data Analysis – Report Progress

Week 11: Extinctions & Prevention

Lab: TBA

Week 12: Endangered Species

Lab: Mapping species' current and predicted presence and designing a multi-species Marine Reserve (Using Open-Source Data in Correlative Species Distribution Modeling of Marine Species)

Week 13: Conservation Planning – Design & Success of Protected Areas

Lab: Modeling Suitable Habitat For A Species Of Conservation Concern: An Introduction To Spatial Analysis With QGIS (NCEP activity)

Week 13: Thanksgiving week

Lab: Service Learning Project Group Work Wrap-Up

Week 14: **Exam 2?** & Wrap Up

Lab: Proposal Reviews

Week 15: Final Presentation to GVC Prep + Reflections & Resumes

Week 16: GVC Presentation & Proposal Due

Grading:

Your grade in this course will be based on the following exams and assignments:

Lab and Service Learning Project: 30% of grade includes engagement & participation in field trips, contributions to group work (data collection, report write-ups, brainstorming and more), lab activities & assignments

Nature Journaling Assignment: 10%

In-class Question of the Day, participation in-class or in online discussions & Case studies: 10%

Research Proposal: 20%

Exams: 30%

Final grades will be assigned according to the following distribution: >93%, A; 90-93%, A-; 87-89%, B+; 83-86%, B; 80-82%, B-; 77-79%, C+; 73-77%, C; 70-72%, C-; 60-69%, D; <60%, E. Under most circumstances, there will be no adjustment to your grades or the grading scale.

Don't be fooled, this is a *reading & writing-intensive* course that requires a lot of work both in and out of class.

Important Dates:

Service Learning Project Field Work: Sept 11, 18, 25, Oct 2

Nature Journals set #1 due Oct 20, Reflection Due Oct 23

Oral Exam 1 Oct 18

Research Proposal Topic Due Oct 25

Research Proposal Annotated Bibliography Nov 8

Research Proposal Draft Due Nov 21

Research Proposal Panel Reviews Nov 27

Oral Exam 2 Nov 29

Nature Journals & Reflection #2 due Dec 6

Final Exam Period Dec 13

Exams (30% of grade)

Two exams – each exam consists of two essay questions. Students will be provided with 10 essay topic options and figures from lecture/text that could be used in support of arguments for those essays. On the day of the exam, each student will be randomly assigned two essays to complete in class. Each student will be assigned different combinations of essays.

Nature Journals & Reflections (10% of final grade)

Students will be required to find a dedicated “sit-spot” in a natural area that they visit once/week. During that visit, students will make detailed observations and record those observations in their journal. Students are also expected to carry their journal to our service learning field site and record observations in their journal at that site as well.

Weekly entries will be checked periodically by Dr. Hannam (either journals will be brought to lab, or pages uploaded to Brightspace at Dr. Hannam's discretion), and at 2 points during the semester, students will write reflections based on their field notebook entries, course readings, activities and discussions.

Class work and assignments including categories below (10% of final grade)

Case Studies

Students will work individually or in groups (as assigned by the instructor) during the semester on case studies (see semester schedule) and other in-class work and assignments. The instructor will announce details for each assignment. Some of these case studies and assignments may require work outside of class. Each of these case studies will have a short written assignment that must be handed in (usually online). All will be graded for completeness (0 for not turned in, 5 for incomplete or low-quality, or 10 for high quality & complete), and 3 will be graded more closely (on a 1-10 scale).

Class Discussions

Article Discussions: We will have (almost) weekly article discussions over the course of the semester during each module. Some discussions will be in class, and students may be assigned to lead discussions. Other discussions will be online. All students are expected to contribute to article discussions.

****Students should expect to see questions about these articles on the exams.****

Question of the Day, Attendance & Class Participation

10points/week – You are expected to be in class every day. Your score is based on contribution to class discussions & my assessment of your engagement in the class activities and case studies.

Service Learning Project and Lab Assignments (30% of final grade)

One credit of this 4 credit course is based on a service-learning project that the class will complete as a group in support of the local land trust for a large portion of the lab. This project will involve completion of background readings/research, collection of data in the field, design and writing of the final materials for the land trust, and presentation of a final report to the class and to the GVC. Your contribution to this project requires your attendance in class and lab participation, both in the field, and during classroom work on the project. Successful completion of this project will require excellent teamwork (as evaluated by Dr. Hannam and your peers), and satisfaction of our client, the land trust.

Weeks of lab not dedicated to the service-learning project will involve field trips and other in-lab activities to support the development of your research proposal and to learn some techniques used to assess data by conservation biologists. There will typically be a short writing assignment associated with each of the lab day activities.

Research Proposal (20% of final grade)

A 8-10 page research proposal will be required from each student in the course. The paper will be based on the student's reading, analysis and synthesis of the primary literature and development of a research proposal in which the student proposes an experiment or study. The proposal may be on any topic within the field of conservation biology. The assignment has multiple components with due dates throughout the semester – please pay attention to these dates on the syllabus/assignment sheet. Additional guidelines will be distributed via Brightspace and in class.

****A Student MUST pass the proposal assignment in order to pass the class and receive credit for this class ****

Late work and Make-up work

In the Brightspace Dropboxes for most assignments you will find that the due date/time may be later than the closing date/time. That means it is possible to submit late work (after the due date/time) up until the closing date/time. Late work is typically penalized -10% for each day late, and the penalty may be assessed proportionally by time.

If you believe you have a valid excuse (illness or other extenuating circumstance) for late work, or need make-up work, you must contact Dr. Hannam as soon as possible, and before the end date of the module in which the work is due. Dr. Hannam will work with each student individually to determine the best solution to the missed deadline.

Communication with the Instructor

The best way to communicate with Dr. Hannam is in person or via Geneseo email (hannam@geneseo.edu). Dr. Hannam will make every effort to respond to messages sent to her during the workday by 5pm the same day. However, be aware that Dr. Hannam checks messages in batches 2-3 times/day, so may not respond immediately even during the workday. Emails sent after 5pm may not be answered until the following workday depending on Dr. Hannam's schedule outside of work. And Dr. Hannam typically takes one day/week off from work (usually Saturdays), and checks email on Sundays only sporadically.

Accommodations

SUNY Geneseo will make reasonable accommodations for persons with documented physical, emotional, or cognitive disabilities. Accommodations will also be made for medical conditions related to pregnancy or parenting. Students should contact Dean in the Office of Disability Services (tbuggieh@geneseo.edu or [585-245-5112](tel:585-245-5112)) and their faculty to discuss needed accommodations as early as possible in the semester.

Academic Dishonesty

SUNY-Geneseo's policies on academic dishonesty are summarized in the Code of Student Conduct found in the Geneseo Undergraduate Bulletin online. Plagiarism and other forms of academic cheating are prohibited and may result in a zero on an assignment or exam. Plagiarism and cheating will be reported first to the departmental office, and may be referred to the Campus Judicial Council. Repeated incidents will result in failure of the course. Exams and term papers will be checked for plagiarism. If you have any questions about what constitutes academic dishonesty please contact the instructor.

Taking Care of Your Mental Health

The Biology major is demanding, and as your instructor I try to keep in mind that mine is not the only course you are taking, and that most of you also have other demands on your time and attention in addition to your coursework. Juggling your many responsibilities can have an impact on your mental health. With this in mind, I realize that 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 strictly related to your course work; if so, please make an appointment to speak with me one-on-one. I realize problems with relationships, family worries, loss, or a personal struggle or crisis can also contribute to decreased academic performance.

SUNY Geneseo provides mental health services to support the academic success of students. Counseling Services, a part of the Lauderdale Center for Student Health & Counseling, offers free, confidential psychological services to help you manage personal challenges that may threaten your well-being and success here in college.

In the event I suspect you need additional support, I will express my concerns and the reasons for them, and remind you of resources (e.g., Counseling Services, Career Services, Dean of Students, etc.) that might be helpful to you. It is not my intention to know the details of what might be bothering you, but simply to let you know I am concerned and that help, if needed, is available.

Getting help is a smart and courageous thing to do -- for yourself and for those who care about you.

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