

SUMMER 2025

ERTH 2910: Ecology of the Chesapeake Watershed (3 credits)

Summer Institute in Ecology & Policy of the Chesapeake Watershed

Georgetown University Earth Commons

Co-Requisite Summer 2025 Course: ERTH 2920 Environmental Policy of the Chesapeake Watershed

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COURSE SCHEDULE INFORMATION**Class Meeting Times**Weekly meetings **Monday & Thursday 10am-1:45pm** (Reiss 439 or Location TBD)→ Full Day Field Trip to Jug Bay Wetlands Sanctuary **Thursday 17 July 2025, 8am-5pm**

COURSE OVERVIEW (ERTH 2910)

Ecology is the study of interrelationships between species and their environments, from an organismal to community scale. Lecture topics will include physical habitat parameters, organismal adaptations to physical conditions, population growth models, life history theory, biodiversity, species interactions, and ecosystem science in a changing biosphere. This course will be an introduction to general ecological principles, with a focus on the Chesapeake Watershed (e.g. nearby Potomac, Anacostia, and Patuxent Rivers). Students will become familiar with the area's rich biodiversity, habitat types, and the environmental challenges faced by this ecosystem. The course will be rich in field-based experiences designed to introduce students to diverse ecosystem types and biodiversity sampling methods.

COURSE LEARNING OBJECTIVES

- I. **Understand ecological systems:** Students will gain a foundational understanding of the watershed's ecosystems, focusing on climate, physical habitats, quantification of biodiversity, species interactions, and ecological processes. In the field, students will develop hands-on proficiency in biodiversity sampling techniques and observational data collection methods in ecology.
- II. **Evaluate ecosystem responses to environmental challenges:** Students will be guided through identification and analysis of key environmental challenges facing the Chesapeake Watershed, such as pollution, habitat loss, and climate change impacts. A Conservation/Restoration Spotlight Project will push students to evaluate how human activities and natural processes shape the watershed's health and biodiversity.

COMMUNITY STANDARDS

We enter this course with diverse lived experiences and coursework backgrounds. Our diversity may be reflected by differences in race, culture, age, religion, sexual orientation, socioeconomic background, and myriad other social identities and life experiences. In this inclusive learning community, our goal is to encourage and appreciate expressions of different ideas, opinions, and beliefs, so that conversations and interactions may be opportunities for intellectual enrichment. The perspective you bring to the course is unique, important, and appreciated. As a member of this course, you are expected to treat your peers, peer

mentors, and instructor with respect, and you can expect to be treated respectfully. Our culture of respect will allow for active listening, comfort while sharing ideas and asking questions, and continuous growth as learners. Expressions or actions that disparage a person or group's identity or life experience are contrary to our mission of inclusiveness and will not be tolerated.

ATTENDANCE AND TIME COMMITMENT EXPECTATIONS

This is an intensive 5-week course with only 10 meetings. As such, attendance (with prompt on-time arrival) at each class meeting is expected.

Georgetown Summer Institutes are designed to be immersive, experiential, and collaborative learning opportunities. As such, it is important that you prepare yourself for immersion over the 5 weeks of the program. Your participation in the two-course Summer 2025 Summer Institute in Ecology & Policy of the Chesapeake Watershed should be viewed as the equivalent of a **full time job**. In some weeks, your workload for EARTH 2910 (Ecology) and EARTH 2920 (Policy) might go up or down, but the expected average total weekly course work, including class meeting times, will not be less than 40 h/week.

Some explanation, based on this Student Resource:

<https://bulletin.georgetown.edu/regulations/studying/#Studying>

In a **15-week semester**, Georgetown students are expected to study at least 6 hours per week for a 3-credit course.

$$6 \text{ hours/week} \times 15 \text{ weeks} = 90 \text{ hours}$$

For a **5-week** summer 3-credit course, the same 90-hour expectation per 3-credits applies.

$$90 \text{ hours} / 5 \text{ weeks} = 18 \text{ hours/week}$$

REQUIRED MATERIALS AND ASSIGNED READINGS

What should I bring to class meetings?

All students should come to each class meeting with a field notebook (bound composition-style preferred), pen or pencil, a personal laptop with up-to-date software including Microsoft Excel, and a personal phone with camera and internet connection.

For outdoor field trips, all students are expected to arrive ready for outdoor work, including weather-appropriate footwear, clothing, hats/gloves, insect repellent, and sunscreen. Outdoor labs are 'rain or shine' (excluding thunder/lightning or dangerous temperatures); please prepare accordingly!

Where can I find reading assignments?

- 1) In the interest of student cost savings and equity in access to materials, no textbook purchase is required for this course. Recommended supplementary textbook readings will be drawn from the open educational resource platform **LibreText Biology's Ecology for All!**

https://bio.libretexts.org/Courses/Gettysburg_College/01%3A_Ecology_for_All

- 2) We will utilize a social reading and annotation website called **Perusall** for selected primary literature readings. Perusall helps you learn faster by collaboratively annotating course readings. High quality annotations contribute to the class by stimulating discussion, explaining your thought processes, helping others, and drawing attention to important points. Perusall requires a free student account. Visit the Perusall website (<https://app.perusall.com/home>), create an account using your Georgetown email address, and enroll in Summer 2025 EARTH 2910 using the appropriate enrollment code below. You will need to enter your Georgetown ID to enroll in the course.

Code TBA as of 2/27/25

ANTICIPATED SUMMER 2025 SCHEDULE

Week	Institute Theme	Monday 10am-1:45pm	Thursday 10am-1:45pm
1 July 7-10	Introduction to the Watershed	Day 1: Intro to Ecology & Global Climate <ul style="list-style-type: none"> • Patterns, Processes, Mechanisms • Climate, Biomes, Biogeography 	Day 2: Local & Regional Environment <ul style="list-style-type: none"> • Ecosystems & Habitats • Tributaries, Hydrology, and Key Species of the Chesapeake Watershed
2 July 14-17	Physical Environment as Habitat for Organisms	Day 3: Niches & Adaptations <ul style="list-style-type: none"> • Water, Energy, Temperature, Nutrients • Productivity • Life Histories <p style="text-align: center;">Quiz 1</p>	Day 4: FIELD TRIP Jug Bay Wetlands Sanctuary 8am-5pm <ul style="list-style-type: none"> • Habitats (tidal freshwater wetlands, forests, meadows, fields) • Taxa (birds, mammals, reptiles, amphibians, fishes, insects, plants) • Sampling Methods (transects, quadrats, seines)
3 July 21-24	Biodiversity & Environmental Change	Day 5: Populations & Communities <ul style="list-style-type: none"> • Population Ecology <ul style="list-style-type: none"> ○ Population Growth Models • Community Ecology <ul style="list-style-type: none"> ○ Predation ○ Competition/Mutualism 	Day 6: Dynamic Environments <ul style="list-style-type: none"> • Coexistence • Disturbance, Succession, and the Intermediate Disturbance Hypothesis • Change in the Chesapeake Watershed <ul style="list-style-type: none"> ○ Sea level rise ○ Warming patterns ○ Storm intensity ○ Eutrophication • Phenology and Change
4 July 28-31		Day 7: Drivers & Consequences of Diversity <ul style="list-style-type: none"> • Species–area relationships • Island Biogeography Theory <p style="text-align: center;">Quiz 2</p>	Day 8: FIELD TRIP Anacostia Riverkeeper Boat Tour 10:30am-12:30pm <p>Spotlight Project: Chesapeake Watershed Conservation/Restoration Success Stories (Research Launch)</p> <ul style="list-style-type: none"> • Critical habitats for conservation (SAV, wetlands, forests) • Restoration/Resilience strategies (living shorelines, wetland protection, climate-smart agriculture)
5 August 4-7	Human Engagement with the Watershed	Day 9: Ecosystem Services <ul style="list-style-type: none"> • Case studies in ecosystem-based provisioning, regulating, cultural, & supporting • Role of watershed services in human well-being in Chesapeake region 	Day 10: Threats to Biodiversity <ul style="list-style-type: none"> • Overfishing • Invasive species • Habitat destruction <p>Spotlight Project: Chesapeake Watershed Conservation/Restoration Success Stories (Student Presentations)</p>

COURSE GRADING

<u>Graded Components</u>	<u>Portion of Final Grade</u>
Preparation, Discussion Participation, Citizenship	15%
Field Trip Collaboration	15%
Quizzes	30%
Conservation/Restoration Success Spotlight Project	40%

Final Grading Scale

A	≥ 93%	B	≥ 83-86%	C	≥ 70-76%
A-	≥ 90-92%	B-	≥ 80-82%	D	≥ 60-69%
B+	≥ 87-89%	C+	≥ 77-79%	F	≤ 60%

DESCRIPTION OF GRADED COMPONENTS

Preparation, Discussion Participation, Citizenship (15%)

I expect you to sustain a high level of participation both in and outside of the classroom in this course. Here are some of the factors that will contribute to your Discussion & Participation score:

- Substantive, on-time **annotation of reading assignments** in Perusall
- Spoken **contributions in classroom discussions** (ask/answer questions, share ideas)
- Active role in **collaborative in-class workshops**
- Utilization of **Student Office Hours**. You are an individual in my classroom and getting to know you as a person is a highlight of my job! Student Office Hours are not just for getting help or reviewing graded work (though you're certainly encouraged to come for those purposes). One-on-one conversations can help you build your network and discuss future courses, research opportunities, grad school applications, and career goals.

Field Trip Collaboration (15%)

The purpose of our field trips is to gain experience observing multiple habitat types, important organisms, and ecosystem services provided by our local waterways. Students will be assigned tasks for collection of observational data during field trips and reporting back to the class to generate comprehensive knowledge via peer-teaching.

Quizzes (30%)

Semi-cumulative open-note quizzes will be given in-person during class time on two scheduled dates. Quizzes may include **Multiple Choice**, **True/False**, **Short Answer**, and **Quantitative Analysis** questions.

Conservation/Restoration Success Spotlight Project (40%)

In place of a Final Exam, your final task for Ecology of the Chesapeake Watershed will be to highlight a local story of successful conservation or restoration using your knowledge of any **two course concepts**. Projects are to be based on course notes and external research, and will be presented to the class in the format of a polished **general audience podcast or news article**. Project details and cooperative workshop opportunities will be provided in class.

ASSIGNMENT POLICIES

Late Assignment Policy: Unless you have communicated the need for an excused extension and had it approved by your instructor in advance of a deadline, the value of any late assignment will be reduced by 10% of earned score per day. Quizzes are an exception, and must be taken on the scheduled date (with exception of emergent extraordinary circumstances, no late quiz completion will be permitted).

Collaborative Work Policy: Some work will be conducted in pairs or small groups. Accordingly, some **assignments** will be prepared jointly by multiple students. Submission of group work assumes understanding and equal contribution of effort from each group member. If you are unsure whether an assignment is collaborative or independent, please ask your instructor for clarification.

Generative A.I. Policy: Artificial intelligence (A.I.) text generation tools such as ChatGPT may be able to assemble background information, generate ideas/topics for assignments, and suggest structure for written work. These uses are permitted in this course. All writing and revising for submitted work, however, must be your own; you may **not** use A.I. text generators to write any portion of a written assignment unless properly cited, and using A.I. tools in this way will be treated as a case of plagiarism and referred to the Honor Council. If used, the A.I. generator used to support your work must be included as a source/citation. As Georgetown academic policy states: **“If you didn’t generate the words yourself, say so by quoting and citing the source; if you generated the words but not the content and ideas, say so by citing the source.”**

ACCOMMODATIONS

Students with Disabilities

When it comes to issues around health and wellness, you may face challenges in your time at Georgetown—and even in the course of one semester. It’s important to be aware of the resources available to support you, including your professors.

Accommodations Requests: If you have a disability that may affect your academic work or well-being and for which accommodations may be necessary, we encourage you to approach one of us within the first two weeks of the course (or, in other circumstances, as soon as possible after accommodation becomes necessary) so that we can arrange for your needs to be met in this regard. You will also need to contact the Academic Resource Center located in Leavey Center.

Accessibility and Inclusion

One of the central tenets of Georgetown’s educational mission is *cura personalis*, a Latin phrase meaning “care of the whole person.” Georgetown is committed to showing care and concern for each student by creating an inclusive and accessible learning environment that follows universal design principles to meet the needs of its diverse student body.

We are committed to creating a learning environment for our students that supports a diversity of thoughts, perspectives and experiences, and honors your identities (including race, gender, class, sexuality, religion, ability, etc.). If your name or pronoun needs to be corrected, please let your instructor(s) know early in the semester so that we can make the appropriate changes to our records.

ACADEMIC INTEGRITY

Students at Georgetown University are expected to maintain the highest standards of academic and personal integrity. Although most Georgetown students conduct themselves in accordance with these standards, occasionally, there are students who violate the code of conduct. Cheating harms the University community in many ways. For example, honest students are frustrated by the unfairness of cheating that goes undetected

and students who cheat can skew the grading curve in a class, resulting in lower grades for students who worked hard and did their own work.

Academic dishonesty in any form is a serious offense, and students found in violation are subject to academic penalties that include, but are not limited to failure of the course, termination from the program, and revocation of degrees already conferred. All students are expected to fully adhere to the policies and procedures of [Georgetown's Honor System](#) and to take the Honor Code Pledge.

Honor Code Pledge: *In pursuit of the high ideals and rigorous standards of academic life I commit myself to respect and to uphold the Georgetown University honor system: to be honest in every academic endeavor, and to conduct myself honorably, as a responsible member of the Georgetown community as we live and work together.*

Plagiarism: Stealing someone else's work is a terminal offense in the workplace, and it will wreck your career in academia, too. Students are expected to work with integrity and honesty in all their assignments. The Georgetown University Honor System defines plagiarism as "the act of passing off as one's own the ideas or writings of another." More guidance is available through the [Gervase Programs](#). If you have any doubts about plagiarism, paraphrasing, and the need to credit, check out [Plagiarism.org](#).

All submissions must be your original work. Any submission suspected of plagiarism will be immediately referred to the Honor Council for investigation and possible adjudication. All students are expected to follow Georgetown's honor code unconditionally. If you have not already done so, please read the honor code material located online at the [Honor Council website](#).

SUPPORT SERVICES

There are many resources on campus available to students for support throughout their time at Georgetown, covering physical and mental well-being. See Georgetown's [Student Health Resources](#) and those resources listed below for more information and please let us know if we can help.

- [Academic Resource Center](#) arc@georgetown.edu 202-687-8354
- [Counseling and Psychiatric Services \(CAPS\)](#) 202-687-6985
- [Institutional Diversity, Equity & Affirmative Action \(IDEAA\)](#) 202-687-4798

Title IX/Sexual Misconduct

Georgetown University and its faculty are committed to supporting survivors and those impacted by sexual misconduct, which includes sexual assault, sexual harassment, relationship violence, and stalking. Georgetown requires faculty members, unless otherwise designated as confidential, to report all disclosures of sexual misconduct to the University Title IX Coordinator or a Deputy Title IX Coordinator. If you disclose an incident of sexual misconduct to a professor in or outside of the classroom (with the exception of disclosures in papers), that faculty member must report the incident to the Title IX Coordinator, or Deputy Title IX Coordinator. The coordinator will, in turn, reach out to the student to provide support, resources, and the option to meet. [Please note that the student is not required to meet with the Title IX coordinator.]

Please note that University policy requires faculty to report any disclosures about sexual misconduct to the Title IX Coordinator, whose role is to coordinate the University's response to sexual misconduct. Georgetown has a number of fully confidential professional resources who can provide support and assistance to survivors of sexual assault and other forms of sexual misconduct. These resources include:

- Jen Schweer, MA, LPC, Associate Director of Health Education Services for Sexual Assault Response and Prevention (202) 687-0323 | jls242@georgetown.edu
- Erica Shirley, Trauma Specialist, Counseling and Psychiatric Services (CAPS), (202) 687-6985 | els54@georgetown.edu

More information about reporting options and resources can be found on [the Sexual Misconduct Website](#).

Title IX/Pregnancy and Parenting Accommodations

Georgetown University is committed to creating an accessible and inclusive environment for pregnant and parenting students. Students may request adjustments based on general pregnancy needs or accommodations based on a pregnancy-related complication. Specific adjustments will be handled on a case-by-case basis and will depend on medical needs and academic requirements. Students seeking a pregnancy adjustment or accommodation should follow the process laid out on the [Title IX website](#).

Discrimination based on sex, including sexual misconduct and discrimination based on pregnancy or parenting status, subverts the University's mission and threatens permanent damage to the educational experience, careers, and well-being of students, faculty, and staff.

Georgetown Library

If you have a question for a librarian you can go to their [“Ask Us”](#) page where you will have the option to chat online, send an email, or schedule a Zoom appointment to discuss a research topic, develop a search strategy, or examine resources for projects and papers. Librarians offer an overview of and in-depth assistance with important resources for senior or master's theses, dissertations, papers and other types of research. This service is available to currently enrolled students who need assistance with Georgetown-assigned projects and papers. Please review the [Services & Resources Guide for Online Students](#) for additional information.

eResources

Students enrolled in courses have access to the University Library System's eResources, including 500+ research databases, 1.5+ million ebooks, and thousands of periodicals and other multimedia files (films, webinars, music, and images). You can access these resources through the [Library's Homepage](#) by using your NetID and password.

Learning Resources

Georgetown offers a host of [learning resources](#) to its students. Two that you might find particularly helpful in this course are the [Writing Center](#) and [Refworks](#).

- [The Writing Center](#) offers peer tutoring by trained graduate and undergraduate students who can assist you at any point in the writing process. They help at any stage of your writing process, from brainstorming to revision. Tutors can offer advice on thesis development, use of evidence, organization, flow, sentence structure, grammar, and more. The Writing Center will not proofread or edit papers; rather, they will help to improve your proofreading and editing skills to become a better writer. Appointments can be booked online through their website.
- [Refworks](#) is an online research management tool that aids in organizing, storing, and presenting citation sources for papers and projects.

Technical Support

All students have 24/7 access to Canvas technical support 24 hours a day, 7 days a week, including live chat and a support hotline at 855-338-2770. Use the 'Help' icon in the lower left of your Canvas window to view all available support and feedback options. If you're looking for help on a specific feature, check out the [Canvas Student Guide](#).