

Estuarine and Coastal Ecology Lab, EVPP 582: Syllabus Fall 2021

Meeting Time: Tuesday 1:30 - 4:20 PM

Location: Potomac Science Center 3208

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Course Web Site: Go to <http://mymason.gmu.edu>, log in with your email name and your GMU email password, select Blackboard, and then select Estuarine and Coastal Ecology EVPP-582 (Fall 2021). All information will be in this location.

Note: The course takes place at an off-campus location: The Potomac Science Center, 650 Mason Ferry Ave, Woodbridge, VA.

Course Description and Goals: This is a hands-on field-based lab in Estuarine and Coastal Ecology. We will focus on the Chesapeake Bay from tidal freshwater to coastal habitats. During the course you will design and execute a field project that can include water quality monitoring, and collections of invertebrates and fish. Your laboratory work will depend on the type of project you decide on; however, lab components may include the identification of invertebrates and fish, fish condition and diet analysis, age and growth analysis, and nutrient and Chlorophyll *a* analysis. For all projects, data analysis and writing will be a necessary component. At the end of the course you will have designed, implemented, analyzed, written, and completed an aquatic ecological study. These skills will be valuable for anyone pursuing a career in science. Furthermore, you will gain many of the field skills necessary for aquatic ecology investigations. Finally, you will strengthen your team working, presentation, problem solving, and scientific writing skills.

Course Content and Instructional Methods: Our course will consist of 6 field trips and laboratory processing days. The beginning of the semester will be field heavy with laboratory work at the end of the semester. Our first two field trips will be during class periods in tidal freshwater. Our next two field trips will be in higher salinity waters and we will decide on exact locations and dates during our first-class period to try and accommodate everyone's schedules. Finally, we will revisit our first two sites later in the class. Given that your data will come from these field trips, they are mandatory unless an emergency arises and your participation grade will be based on your participation during these trips (100 pts.) With this sampling design you will be able to ask research questions that vary both spatially and temporally. During the field trips we will all perform the collections necessary for everyone's projects, while simultaneously learning about the general patterns in each environment. Although you will all focus on your own research project, there can be a lot of information sharing and overlap between projects; e.g. water quality variables can be a component of each project. On the last day of



class, you will present your research project to the rest (100 pts) of the class and hand in your final laboratory report (100 pts). To gain experience writing a scientific paper, you will write your report as a scientific manuscript ready to be submitted to the journal Estuaries and Coasts. As such, each paper will include a title, abstract, introduction, methods, results, and discussion section. The Estuaries and Coasts guide for authors will be a great resource for compiling your final manuscript (<https://www.springer.com/journal/12237/submission-guidelines>).

Grading

Participation: 100 pts (33.33%)

Presentation: 100 pts (33.33%)

Final Report: 100 pts (33.33%)

Total: 300 pts (100%)

Weekly Schedule* many of these dates are place holders. We will work to find days that work for everyone at the start of class

Week	Date	Time	Topic
1	8/24		Intro lecture, Overview of Field Sampling Options and Locations and project discussions
2	8/31		Occoquan Day 1 (during class)
3	9/7		Occoquan Day 2 (during class)
4	9/14		SERC / Mesohaline Bays (Potential)
4.5	9/17 - 19		Field Trip down to coast and/or Mesohaline Bays (Potential).
5	9/21		SERC field trip / Mesohaline Bays (Potential)
6	9/28		SERC field trip / Mesohaline Bays (Potential)
6.5	10/1		Other potential weekday / weekend field trip
7	10/5		Revisit Sampling Location 1 sites (during class)
8	10/12		Revisit Sampling Location 2 sites (during class)
9	10/19		Work on Samples at PEREC (I should be available for help)
10	10/26		Work on Samples at PEREC (I should be available for help)
11	11/2		Work on Samples at PEREC (I should be available for help)
12	11/9		Work on Presentations and Term Papers
13	11/16		Work on Presentations and Term Papers
14	11/23		Final Presentations and Papers due (or no class)
15	11/30		Final Presentations and Papers due (if not in prior week)

Websites to Download R and R-Studio as well as free online textbooks, code, and examples (Suggested Statistics platform for this course). For those of you unfamiliar with R, we can work together to get you up to speed to analyze your data!

R - <https://cran.r-project.org/>

R Studio - <https://www.rstudio.com/products/rstudio/download/#download>

Nice free online resource that starts with software download - <https://bookdown.org/ndphillips/YaRrr/>

Handbook written by a colleague - <https://bstaton1.github.io/au-r-workshop/>

There are no required textbooks for this course. However, these books are freely available and provide insight and background to the Chesapeake Bay and Estuarine Ecology as a whole. We will have other field and identification guides available for field and lab work as needed.

Day, J., Kemp, W. M., Crump, B. C., & Yáñez-Arancibia, A. (2012). Estuarine ecology, second edition (2nd ed.). Wiley. <https://onlinelibrary-wiley-com.mutex.gmu.edu/doi/book/10.1002/9781118412787>

Lippson, A. J., & Lippson, R. L. (2006). Life in the Chesapeake Bay (3rd ed.). The Johns Hopkins University Press. <https://ebookcentral-proquest-com.mutex.gmu.edu/lib/GMU/detail.action?docID=3318350&pq-origsite=primo>

Honor Code: Mason is an Honor Code university; please see the Office for Academic Integrity for a full description of the code and the honor committee process (see below for the student pledge). In this course the honor code applies as follows, when you are responsible for a task, you will perform that task. When you rely on someone else's work in presentations or papers, you will give proper citation to that work.

Student Pledge: To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of the George Mason University Community and with the desire for greater academic and personal achievement, we, the student members of the university community, have set for this Honor Code: Student Members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.

Gender identity and pronoun use: If you wish, please share your name and gender pronouns with me and how best to address you in class and via email. I use he/him/his for myself and you may address me as Reid or Dr. Nelson in email and verbally.

Safe Return to Campus Statement: First of all, I want to address that these are new and uncertain times for everyone. Over the course of the pandemic, I have dealt with my own anxiety and stress management issues and strongly encourage everyone to practice good self-care and try to consciously maintain a healthy mental state. For anyone that is feeling anxious or overwhelmed by the return to campus, the state of the world in general, or any other issues, please reach out to the CAPS center and seek help as needed <https://caps.gmu.edu/covid19/>. Speaking from personal experience, talking to

someone and getting strategies to maintain good mental health can be paramount to our well-being, happiness, and intellectual pursuits.

All students taking courses with a face-to-face component are required to follow the university's public health and safety precautions and procedures outlined on the university Safe Return to Campus webpage (<https://www2.gmu.edu/safe-return-campus>). Similarly, all students in face-to-face and hybrid courses must also complete the Mason COVID Health Check daily, seven days a week. The COVID Health Check system uses a color code system and students will receive either a Green, Yellow, or Red email response. Only students who receive a "green" notification are permitted to attend courses with a face-to-face component. If you suspect that you are sick or have been directed to self-isolate, please quarantine or get testing. Faculty are allowed to ask you to show them that you have received a Green email and are thereby permitted to be in class. Students are required to follow Mason's current policy about facemask-wearing. As of August 11, 2021, all community members are required to wear a facemask in all indoor settings, including classrooms. An appropriate facemask must cover your nose and mouth at all times in our classroom. If this policy changes, you will be informed; however, students who prefer to wear masks either temporarily or consistently will always be welcome in the classroom.

Absenteeism Policy: Given that a large component of this course are the field trips, the data that is collected on these trips, and the final lab report (scientific manuscript) based on this data, I hope everyone will be able to make each trip. We will work together on the first-class period to schedule our field trips so that everyone will be able to participate. Unforeseen personal issues may arise and if these occur please contact me as soon as possible and we will work together to accommodate absences as needed.

Disability Accommodations: Disability Services at George Mason University is committed to upholding the letter and spirit of the laws that ensure equal treatment of people with disabilities. Under the administration of University Life, Disability Services implements and coordinates reasonable accommodations and disability-related services that afford equal access to university programs and activities. Students can begin the registration process with Disability Services at any time during their enrollment at George Mason University. If you are seeking accommodations, please visit <http://ds.gmu.edu/> for detailed information about the Disability Services registration process. Disability Services is located in Student Union Building I (SUB I), Suite 2500. Email: ods@gmu.edu | Phone: (703) 993-2474.

Sexual Harassment, Sexual Misconduct, and Interpersonal Violence: George Mason University is committed to providing a learning, living and working environment that is free from discrimination and a campus that is free of sexual misconduct and other acts of interpersonal violence in order to promote community well-being and student success. We encourage students and employees who believe that they have been sexually harassed, sexually assaulted or subjected to sexual or interpersonal misconduct to seek assistance and support. University Policy 1202: Sexual Harassment and Misconduct speaks to the specifics of Mason's process, the resources, and the options available to students and employees.

Notice of mandatory reporting of sexual or interpersonal misconduct: As a faculty member, I am designated as a "Non-Confidential Employee," and must report all disclosures of sexual assault, sexual harassment, interpersonal violence, stalking, sexual exploitation, complicity, and retaliation to Mason's Title IX Coordinator per University Policy 1202. If you wish to speak with someone confidentially, please

contact one of Mason's confidential resources, such as Student Support and Advocacy Center (SSAC) at 703-993-3686 or Counseling and Psychological Services (CAPS) at 703-993-2380. You may also seek assistance or support measures from Mason's Title IX Coordinator by calling 703-993-8730, or emailing titleix@gmu.edu.