Estuarine and Coastal Ecology Lab
EVPP/BIOL 582
Syllabus

Instructors: **Dr. Kim de Mutsert**
Assistant Professor, Environmental Science and Policy

Course Description and Goals: This 1-credit lab is a hands-on field course in Estuarine and Coastal Ecology. Students are expected to start with knowledge of the physical, chemical, and biological processes operating in estuarine and coastal ecosystems. This course will focus on the Chesapeake Bay from freshwater tidal to Atlantic coastal. During the course, students design and execute a field project. Field components can include water quality monitoring, and collections of plants, algae, invertebrates and fish. Lab components will include identification of invertebrates and fish, nutrient and Chlorophyll *a* analysis, and data analysis and interpretation. After completion of the course, students should have gained experience in developing a project, and performing field research in various components of estuarine ecology. Through this course, students will also strengthen their team working, presentation, and scientific writing skills.

Course Content and Instructional Methods: The course consists of three field trips and sample processing lab days. The sampling locations are situated on a salinity gradient; we will sample tidal freshwater, brackish, moderately salty, and full marine water environments. Students will use the lab intro information, provided the first day of class, to work out a research project. Project proposals will be presented in class, and projects finalized with the help of the instructors. During the field trips all students will perform the collections necessary for their project, while simultaneously learning about the general patterns in each environment. Each student works on their own project, but there can be a lot of information sharing and overlap between the projects; e.g. water quality variables can be a component of each project. The last class day students will present the results of their project. Students will hand in their report last day of class as well. The report should be written as a scientific paper describing your field project. It will contain a title, abstract, introduction, methods, results, discussion, conclusion and references. You are allowed to combine results, discussion and conclusion into one section, or keep them separate. The result section should contain graphs and tables. Use the format of the Journal 'Ecology' to list your references. Your references should at least contain three published peer-reviewed papers. There is no length requirement for the paper, just make sure it contains the above-mentioned components.

Grading:		
	Participation:	100 pts
	Presentations:	100 pts
	Report:	100 pts

Honor Code: Adherence to the *GMU Honor Code* is expected of all students, specifically:

> *Members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.*

In all assignments and communications, plagiarism will not be tolerated. This applies equally to oral and written communications in the context of any evaluated (graded) course assignments. In presenting quotes, paraphrasing statements or logical arguments from others in any medium (on-line, oral or written), students should properly cite their source. Any public usage of original material from this course (e.g., presentations, images, etc.) without explicit permission of its creator shall be construed as stealing. As stated in the Honor Code, infractions may result in invalidated credit for dishonorable work and lowered grade, including failure from the class, suspension or dismissal. Inquiries for clarification from the professor are welcome. Thank you in advance for your conscious attention to these issues.

Absenteeism Policy: Please inform your instructor in advance if you will be absent from class due to sickness or other reasons.

Notes on field trips: We will be working outside in potentially adverse conditions. Come prepared for hot weather, lots of sun, rain, and mosquitos. Come with a daypack that contains water, food, sunscreen, a change of clothing, raingear, small towel, and mosquito repellent. You will likely get your feet wet. Notify your professor if you cannot swim. Life vests should be worn at all time when on a boat, for the 3rd field trip to Eastern Shore Lab, closed toed shoes are mandatory when in the boat and in the lab. We will be staying two nights at the Eastern Shore Lab field station (first two trips are day trips). Students are responsible for bringing food for breakfast, lunch, and dinner. The meals and cooking options can be discussed in advance in class. Leave the accommodation cleaner than you found it. Don't leave any food. We will decide on where to meet and how to get to the field sites before each field trip. There will be transportation to the field sites.

Readings:

There is no assigned textbook, but I encourage all students to check out or buy (you can get it used for less than $5 online):

Lippson, A.J. and Lippson, R.L. 2006. Life in the Chesapeake Bay, third edition. The John Hopkins University Press, Baltimore.

Students that have not taken EVPP 581/BIOL 581 are encouraged to check out and read in advance:

Day, J. W. Jr., B. C. Crump, W. M. Kemp and A. Yáñez-Arancibia (eds). 2012. Estuarine Ecology, second edition. Wiley-Blackwell, New Jersey. ISBN: 978-0-471-75567-8.

Schedule

Week	Date	Time	Topic
1	6/2	4:30 PM	Intro lecture, Overview of Field Sampling Options and Locations
1	6/4		No class, work on project proposal
2	6/9		No class, work on project proposal
2	6/11	4:30 PM	Present project proposals, discuss and finalize in class
2	6/13	9:00 AM	Field day in Gunston Cove
3	6/16	4:30 PM	Work on Gunston Cove samples
3	6/18	4:30 PM	Work on Gunston Cove samples
4	6/23		No class
4	6/25		No class
4	6/27	8:00 AM	Field day in Point Lookout State Park
5	6/30	4:30 PM	Work on PLSP samples
5	7/2	4:30 PM	Work on PLSP samples
6	7/7		No class
6	7/9		No class
6	7/10	6 PM	Drive to VIMS Eastern Shore Lab, Wachapreague, VA
6	7/11	All day	Field day Wachapreague
6	7/12	Half day	Lab day Wachapreague
7	7/14	4:30 PM	Work on ESL samples
7	7/16	4:30 PM	Work on ESL samples
8	7/21	4:30 PM	Analysis and report writing
8	7/23	4:30 PM	Presentations and report due

THERE IS NO EXAM