

Chesapeake Bay Governor's School for Marine and Environmental Science
Glenns Campus

Marine and Environmental Science I - Fall 2015/Spring 2016

RCC MAR 201/202 Marine Ecology I&II (4 credits/semester, total 8 credits)

Instructor: Sara Chaves Beam

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Course Description- This is the first year of a two-year curriculum that will expose students to a broad spectrum of marine and environmental concepts. The Chesapeake Bay will be our classroom as we explore the dynamic environment of the estuary, the habitats and organisms that call the Bay home. Our emphasis will be on the interconnectedness of all components of the ecosystem and on our role as the top consumer. Students will be challenged to think critically and communicate effectively. Throughout our study we will employ the scientific method through lab and field studies culminating in the students identifying and developing their own independent research project to pursue through their junior summer and senior year.

Course Syllabus-

Unit 1- *Introduction to the Chesapeake Bay Estuary and the Scientific Method*

Profile of the Chesapeake Bay, salinity and the watershed
Introduction to the Scientific Method, research and experimental design, generating hypotheses, graphing and data presentation, statistical analysis and scientific writing.

Unit 2- *The Environment of the Chesapeake Bay*

Estuarine circulation, water chemistry, eutrophication. How have humans impacted the Chesapeake through the past 400 years and what are the implications of our actions on the future of the Chesapeake Bay ecosystem?

Unit 3- *Our Atmosphere and the Environment*

Global atmospheric thermodynamics, weather, wind belts, Hadley cells, global climatic zones, ENSO, NAO, study of prevalent climate change predictions, little Ice Age, solar activity, global water issues, energy issues.

Unit 4- *Estuarine Ecosystems- A Survey of the Chesapeake Bay*

Major habitats and prominent organisms of the Chesapeake Bay and their ecosystem functions with an emphasis on the trophic linkages between them: shallow water habitats-salt marshes and wetlands; SAV beds; oyster reefs; mud bottom; and the pelagic environment. Compare and contrast tropical and temperate estuaries; mangroves and global estuarine issues and the impacts we have on the global ecosystem.

Texts: Turning the Tide, Tom Horton (summer reading)

Other selected readings throughout the year as assigned

Required Materials: 3-ring binder with dividers and paper for note taking, blue/black pens, pencils, Composition bound notebook (this will serve as a journal for PE credit and must be taken on all field trips), yellow "write in the rain" field notebook (we have at CBGS). **A computer "Flash" drive is required and must be brought to each class session.**

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Course Expectations:

1. Be respectful of your colleagues and instructors always, and respectful of the environment and critters when out in the field.
2. Follow school rules, treat equipment with care, and observe proper safety measures in class, labs and in the field.
3. Be in class every day, ready when class starts and PARTICIPATE! You cannot learn simply by osmosis, you need to be engaged, asking questions and taking notes. In the field, a can-do, adventurous attitude is a must- remember, **mud is a GOOD thing.**
4. In field activities, students will conduct themselves in a safe and mindful manner taking care to observe rules of boats, buses and teachers.

Grading: Your grade will be based on the following percentages:

Tests & Projects	60%
Classwork/Homework/Quizzes	30
<u>Participation & Preparedness</u>	10 (this is both for classroom and especially in fieldwork)
	100 %

Attendance: Attendance is required, if you are absent, it is **your responsibility** to make up any missed assignments, and get notes. Make-up work is due within 2 days of your return to class and tests or quizzes must be made up **THE DAY** you return. A deduction of one letter grade/day late will be assessed for late work. Please contact me if you will be missing class so we can avoid any problems and make sure you can keep up.

Policy for Cell Phones/ Laptop Computers/ Misc. Electronic Devices/Inappropriate computer use:

No cell phones, laptop personal computers or handheld video games may be used during designated class time unless approved by instructor. Class begins promptly at the assigned time and all electronic devices must be off, put away, and not immediately available for use during time devoted to learning. Use of CBGS computers must follow appropriate computer etiquette where equipment is treated carefully and respectfully, and appropriate student content only is observed. If a student is found violating this policy the following actions will be taken:

1. First offense a verbal warning will be issued.
2. Second offence a written school referral will be issued to the student; their parents and the home school will be notified and appropriate action taken based on school policy.

Tips for Success:

A good student is fully present in class, that means they are focused on what is going on in the lecture or activity, they are actively learning, asking questions, taking notes and thinking about what they are doing. Start with good habits like being prepared when class begins, ready to take notes, having done homework and write down any questions you may have thought of prior to class. Write down assignments in a separate "To Do" ledger, this will help you organize your time and prioritize your assignments. I often give larger projects or papers a big block of time for completion, a few weeks even. This means that you need that much time to get organized, do research, gather sources,

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think, outline, write and edit. It does not mean that you have two weeks to wait to do it, i.e. the night before. An effective student engages their instructor in class, and keeps in contact, asking questions, and seeks out answers when they are confused or curious. Put me to work, that's why I am here! SCB

CBGS Statement on Safety What to know and do to be prepared for emergencies at CBGS/RCC: - Sign up to receive RCC text messaging alerts Keep your information up-to-date

(<https://alert.rappahannock.edu/index.php?CChack=1>)

- Know the safe evacuation route from each of your classrooms. Emergency evacuation routes are posted in campus classrooms. -
- Listen for and follow instructions from CBGS/RCC or other designated authorities. -
- Know where to go for additional emergency information.
- Report suspicious activities and objects

Statement on Americans with Disabilities Act Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 require Schools to provide an 'academic adjustment' and/or a 'reasonable accommodation' to any qualified individual with a physical or mental disability who self-identifies as having such. Students should contact inform CBGS faculty for appropriate academic adjustments or accommodations.