Chesapeake Bay Governor's School / Rappahannock Community College
Syllabus for Marine & Environmental Science I
(RCC MAR 201-202, 4 credits/semester, 8 credits total)
Mrs. Bethany Smith
Warsaw Campus, Fall and Spring 2013-2014

CBGS-Warsaw: (804) 333-1306; Monday-Friday 7:30 am – 3:00 pm
Home: (570) 242-9232 before 9:00 pm
Email: bsmith.cbgs@gmail.com; bsmith@cbgs.k12.va.us

Course Description and Objectives

This is the first year of a two year curriculum which will expose students to a wide range of marine and environmental topics. We will specifically focus on Chesapeake Bay, as we explore the dynamic and particularly harsh estuarine environment, as well as the habitats and organisms that call the Bay home. We will emphasize the interrelationship between the physical, chemical, and biological components of Chesapeake Bay, and how each contributes to stability and instability of the other two. Students will be encouraged to think critically and discern ecological relationships that may not be readily apparent.

A second aim of this course is to train students in the methods with which scientists conduct research; including experimental design, data collection, analysis, and interpretation. You will be expected to actively participate in classroom research by designing and conducting your own experiments. You will utilize laboratory investigations, field trips, and real-time scientific data to hone your research skills. Ultimately, students will identify and plan their own independent research project to pursue through their junior summer and senior year.

Finally, this class will require you to participate. Marine and environmental sciences are particularly well suited for "doing"; meaning that you will have plenty of opportunity for hands-on experiences, as well as active discussions and debates and a variety of topics. You should prepare yourself to look at the "big picture" and think about concepts and relationships in ways that may be unconventional.

Course Syllabus:

Unit 1- *Chesapeake Bay and the Scientific Method*: An overview of the physical, chemical, and biological parameters of Chesapeake Bay. The Scientific Method including data collection, statistical analysis, graphing and data presentations.
Unit 2- *Open Water Estuarine Communities*: Planktonic communities, limiting nutrients, stratification and vertical mixing, eutrophication and benthic hypoxia, harmful algal blooms and aquatic illnesses.
Unit 3- *Estuarine Nearshore Environments*: Salt marsh and submerged aquatic vegetation, estuarine benthos, estuarine current issues including oyster reefs and restoration and invasive species.
Unit 4- *Estuarine Fisheries Science*: Ecological efficiency and physical-biological coupling. Chesapeake Bay fisheries, aquaculture, and fisheries regulations.

Texts: Turning the Tide, Tom Horton

Marine Biology, Peter Castro and Michael E. Huber

Required Materials: A 3-ring binder devoted solely to Marine & Environmental Science. You should have dividers so you can separate sections for notes/handouts, graded papers, and research. You should have a notebook or loose-leaf paper that can be added to your binder to take notes on. You should also have pens & pencils and a calculator handy. We will do a fair amount of coloring, so if you would like your own personal set of colored pencils, keep those handy. You will also need a composition bound notebook to serve as your journal and a "write in the rain" notebook (this will be your field notebook), this MUST be taken on all field trips. After certain field trips/activities I will collect and grade your journal and/or field notebook.

Course Expectations:

1.) Be respectful of your fellow students and instructor. Listen carefully to your colleague's thoughts and ideas. We will foster a learning community through which we can all learn from each other. Additionally, be careful stewards of the environment and the organisms living in it while on field trips.
2.) Follow school rules, treat equipment carefully, and follow instructor's safety rules in the lab and field.
3.) Come to class every day ready to participate! You should be prepared for all class discussions and debates and ready to take notes and ask/answer questions as they arise.
4.) In the field, you should be prepared to get wet and dirty, and make sure to bring your adventurous attitude.

Grading: All assignments will be graded on a points basis. Points will be tallied into two sub averages (quizzes, exams, and projects) and (homework, labs, field studies, in-class discussions and debates). Quarter/Semester grades will be derived as an average of the two sub-groups.

Attendance: Attendance is required in both class and on field trips. If you are absent, it is your responsibility to find out what you missed. Get any notes you missed from a friend, and be sure to ask me for any handouts and assignments.

Assignments that were due the day of your absence are due the day you return to school. Make-up exams/ quizzes are due within 1 week of your return. It is your responsibility to schedule a time for a make-up exam or quiz. If you have an extended absence, I am flexible, but you will need to contact me within a week so we can discuss your options.

Attendance will be reported to parents on interims and grade reports. In the event of five (5) or more absences that are non-school related within a marking period, a parent conference will be requested.

Homework: You will not receive daily homework in M&E I. Many times you will begin an assignment in class and be asked to finish it or do some follow-up questions in time for our next class meeting. These assignments will not be accepted late. If you are absent, the assignment is due the day you return, even if we do not meet for class (hand to me, or put in my mailbox).

Projects: You will have quite a few activities and projects in M&E I. You will be given class time to work on many of them, although it will be your responsibility to make sure your project is complete and turned in by the due date. Projects turned in late will be subject to a 2 point per day deduction up to 1 week late. After 1 week, projects turned in will be graded for completion only and will be given a minimum completion grade of 50%.

Cell Phone Policy: All cell phones and other electronic devices must be silenced and stowed during lecture/lab/field trips. They are not to be taken out or used during any of these times as well. If I see it, I will confiscate it for the remainder of the class period.

Honor Code: Academic honesty, respect, trust, integrity, and responsibility are underlying core values that support the Honor Policy and Honor Pledge of the Chesapeake Bay Governor's School. Failure to abide by the Honor Policy will result in disciplinary action as detailed in the Honor Policy in the Student Handbook.

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?CCheck=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.