



Marine & Environmental Science II

2015/2016

Instructor Information:

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Course Credit: (MAR 102 General Oceanography I&II) 3 credits/semester

Course Description: This course is the second part of a two-year lab and field science course designed to explore the principles of general ecology, environmental science, and oceanography. The entire two-year course is interdisciplinary in spirit, stressing the importance of chemical, physical, and geological oceanography for understanding marine life, aquatic ecosystems, and human interactions with marine systems. The curriculum will largely be driven by the data and investigations of real scientists, and students will design and conduct their own scientific research.

This year, our exploration of the ocean planet will emphasize the oceans and life in them. We will use lab activities, field experiences, and analysis of real data in this course to emphasize the important interconnections of chemical, physical, geological and biological oceanography. We will continue our research projects which will culminate in formal presentations.

Course Outline:

Unit 1: Coastal Environments: Barrier islands, sand beaches, rock shores, coral reefs. Wave characteristics, wave/sediment dynamics & features, longshore currents.

Unit 2: Open Ocean Environments: Pelagic oceans and the deep sea. Ocean chemistry and acidification, Coriolis, Ekman transport, surface currents and deep ocean currents.

Unit 3: Other Ocean Environments

Ocean floors, hydrothermal vents, upwelling zones, and polar oceans. Ocean floor geology, hydrothermal vent communities, and Ocean chemistry.

Unit 4: Climate Change

Climate patterns, Carbon cycles, anthropogenic changes, climate change and the Ocean.

Unit 5: Marine Biology

Evolution of marine life, taxonomy and marine biodiversity, focus will be on Molluscs and Fishes.

Unit 6: Scientific Analysis and Presentation (throughout course)

Statistical analysis, Developing conclusions, Written and Oral Presentations.

Text: **Introductory Oceanography**, Thurman & Burton, 9th Edition and **Marine Biology**, Castro & Huber, 4th Edition

Required Materials:

Yellow Field Notebook

A 3-ring binder (or section within) devoted solely to this course

A notebook or loose-leaf paper that can be added to your binder to take notes on.

Graph paper

Pens & pencils (at least 2 different colors)

Calculator

USB flash drive

Course Expectations and Policies:

RESPECT the property, rights, and dignity of yourself, others in the room, the room and all equipment and materials, everyone we deal with, the environment.

Safety: Be aware of yourself and your surroundings in all situations.

Attendance: Class attendance is required. Be reminded of the CBGS policy in the *Handbook* which you signed. Absences and tardies will be reported daily to your home school and to parents on interims and grade reports.

Class Participation: You will get the most out of this class if you come prepared each day and participate in the discussions and other activities. Participation is a component of your daily, lab, and homework averages each marking period.

Reading Assignments: Reading a science text is not like reading a novel! Read prior to the class discussion of the topic. Answer the assigned questions prior to the discussion. Write down any questions you have and ask them in class.

Note Taking: You will need a notebook or section of your binder for the notes you will take in class as well as the notes you *should* take as you read each chapter. It is wise to learn now how to take detailed notes during class discussions.

Note Making: You will need to stop periodically to review and rewrite your notes (at least at the end of each chapter). Summarizing your notes in this way is an excellent way to study, and, if you do it nightly, it will point out questions you need to ask the next day in class.

Free Writing: Frequently you will be asked to write your thoughts and questions about a topic from your reading assignment. You will be expected to write continuously about whatever comes into your head about the concept. This writing will be the starting point for many class discussions.

Lab Work: Lab work is an integral part of biology. We will do several of the required AP Biology labs plus other labs throughout the year that are designed to give you a better understanding of the experimental work of biologists and enhance your understanding of concepts. In these labs you will investigate a question or relationship, collect and analyze data, interpret the results, and draw conclusions. You will write at least one formal lab report each quarter that will include an introduction, an explanation of the methods, data tables and graphs, and a discussion of the results. You will be expected to type these reports.

Evaluation: Formal evaluations (tests) will include problems, short answers, graphs with data analysis, and/or essays. These will all involve critical thinking skills to prepare you for future scientific endeavors. Evaluations will usually occur at the end of each unit. Quizzes may be given as quick homework checks.

Grading:

- **90% Assignments:** All classwork, homework, labs, evaluations, presentations, and all work related to the IRP will be given a point value. Point value will be based on the amount of time and effort that should be put into each assignment (possible examples: HW 10 pts, lab 50 pts, exam 100 pts, IRP paper 500 pts). Your assignments grade will be the percentage of obtainable points that you earned.
- **10% Class Participation:** Your interactions within groups of peers, your contributions to class discussions, and preparedness for class. Part of your grade will be a participation grade earned on field trips.

Individual and Group work: Unless specifically indicated, all work is to be done individually and each student must turn in their own assignment. When group work is assigned, one assignment per group is to be turned in unless otherwise specified.

Turning in work: Unless otherwise noted, class work and tests are due at the end of the class period in which they were assigned. Homework (including papers, labs, and other projects) are due at the beginning of class on the due date. In general, most assignments can be emailed to me, but when specified, hard copies must be brought in. If you do not have email access, bring it in on a USB drive, but make sure it is on my computer before class starts. When submitting assignments electronically, all files must be labeled as lastname_firstname_assignment and the subject line of emails must include the assignment name. Attachments or emails that do not fit these criteria will not be read, assignments can be resubmitted, but will be considered late. As always, please come to me with any issues you have.

Late & Make-Up Work: All assignments are expected to be turned in on the day they are due. Assignments turned in late will receive a 10% deduction of the earned grade for every day that they are late; however, homework and daily work that are vital to that day's class participation will not be accepted late (pre-labs, readings for class discussion, ect.). **After 1 week assignments will not be accepted.** Exceptions for extenuating circumstances can be made, but you MUST talk to me first.

It is the student's responsibility to collect any missing work while absent. Check the website for any assignments, secure any missed notes from a friend, and be sure to get any handouts and assignments from me. Assignments, tests, and projects due on the date of the absence are due upon return to school. If an assignment was due via email or other electronic format, it is still due if you aren't present. Work assigned while absent is due within two days of returning to school. Again, exceptions for extenuating circumstances can be made, but you MUST talk to me first.

Tips on how to survive this course:

- Keep up to date/ahead of schedule (Especially with the IRP!!!!!!). It is too easy to get bogged down otherwise. We do *not* meet every day!
- Realize that you will have to work/read on weekends and holidays. You should spend at least 30 minutes a night on work for this course. Lab analysis will require more time.
- You may have to stay late, come early, form a study group, and ask for help.
- Ask questions in class.
- Get organized!** Find what works for you and don't get stuck in a rut.
- Get Lucky!** Remember, luck isn't being in the right place at the right time, it's having the right mindset to capitalize on chance events.
- Sharpen your critical reading, note taking, and essay writing skills.
- Rely heavily on your text reading for "details"—it is impossible for me to cover every detail in class. Read the photo blurbs! Process the graphs and illustrations!
- Schedule your time and use it effectively!
- If a homework or lab assignment is giving you trouble, **CALL or EMAIL ME**. Don't come to class the next morning with the "I didn't understand this..." excuse.

Cell Phone/Electronics Policy: All cell phones and other electronic devices must be silenced and are not to be used during class, unless permission is given otherwise. If used in an unauthorized manner, electronics will be confiscated and returned at the end of the class period. In this class, cell phones are like superhero powers: awesome if used for good, bad if used for evil.

Honor Code: Students are expected to follow the rules and procedures as outlined in the Student Honor Code. Please refer to the Student Handbook if you need guidelines. Failure to do so may result in dismissal from the course. There is a new honor policy for 2013.

Inclement Weather and School Closings Policy

-Closing of the Chesapeake Bay Governor's School Bowling Green campus is determined by Caroline County School Board

- If a school system is closed due to inclement weather and the CBGS is open, students from the **closed** school system may attend pending the safety of the roads and permission from parents.
- There may be an emergency in which the CBGS is closed and the particular school system is open. Students shall report to their respective school instead of going to CBGS.
- If there is a one hour delay for the CBGS site, CBGS will open one hour late.
- If there is a two hour delay for the CBGS site, CBGS will be closed and students are to report to their home high school.
- If the home high school opens one hour late, and CBGS opens on time, students from the home high school are to report to CBGS, one hour late.

Emergency Evacuation Plan: In each classroom, laboratory or other places where students are assembled for the purpose of instruction, a fire evacuation plan will be posted indicating the direction of travel from the room in the event it becomes necessary to evacuate the building as a result of fire or other emergency. This plan will be posted in a conspicuous place near the exit from the room. Whenever the fire alarm sounds, the building will be evacuated. The instructor will ensure the fire door is closed upon leaving the area (doors with automatic closures on them). Instructors are also responsible for assisting disabled students. If a classroom does not have an evacuation plan posted, the student or instructor should notify the academic dean.

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 CBGS faculty for appropriate academic adjustments or accommodations.