



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

**Foundations in Science    SCT 111/112**  
2015-2016  
Mr. Beam

**Course Description:** This sophomore level course will explore the Earth Science systems with an emphasis on the geology and ecology of the Chesapeake Bay Watershed. Foundations of Science will be technology based and include science methods, data collection and the application of computer programs.

Students will explore the ecology of the Chesapeake Bay Watershed while camping, kayaking, and hiking on day and overnight trips.

**Course Credit:** 3 credits per semester

**Contact info:** Warsaw Office: (804) 333-1306  
Home: (804) 758-4095  
Email: jbeam@cbgs.k12.va.us

**Textbooks:** *Living in the Environment*, Miller (14<sup>th</sup> Edition)  
*Turning the Tide*, Horton    *Taking Sides, Environmental Issues*, Goldfarb

**Course Expectations:**

1. Be Prepared and On Time
2. Be Courteous and Respectful
3. Follow All School Rules
4. Follow safety measures in the class and in the field
5. Be in class and participate every day

**Required Materials:**

- 3-ring binder with dividers
- Pencil and pens
- Field notebook
- Journal

**Grading:** Grades are determined using a point system.

|            |            |
|------------|------------|
| Tests      | 100 points |
| Quizzes    | 25         |
| Projects   | 100-200    |
| Class work | 20-100     |
| Homework   | 20-50      |

Course grades will be assigned on the scale,

A = 90 -100    B = 80 - 89    C = 70 - 79    D = 60 - 69    F < 60

## **Course Topics / Sequence:**

### *Unit 1: Introductory Geology*

- Origins (Big Bang, oceans, atmosphere, life)
- Maps – (Lat/Long, Hurricane plots, bathymetric maps, Topo maps)
- Rocks & minerals / Rock cycle processes (erosion, weathering, deposition...)
- Earth History (fossil record, absolute and relative dating)
- Plate Tectonics (Cont. Drift, Seafloor Spreading, Boundaries)
- Climate Change (Greenhouse Effect, Sea level Change...)
- Geologic History / Geologic Provinces of Virginia

### *Unit 2: Themes of Ecology*

- Earth Spheres (Lithosphere, Hydrosphere, Atmosphere, Biosphere)
- Geochemical Cycles (Water, Carbon, Nitrogen, Phosphorous, Sulfur)  
- Sources, Sinks and Processes
- Natural vs. Human Impacts
- Ecosystems (Terrestrial and Aquatic)  
- Communities, Population Dynamics, Food Webs, Biomes, Succession

### *Unit 3: Watershed Ecology*

- Watershed Controls (Hydrology, Geology, Climate)
- Water Chemistry / Properties
- Watershed mapping / Stream monitoring / Water Quality parameters
- Spatial / Temporal studies
- Water usage by Humans / Water Pollution / Toxins / Sewage

### *Unit 4: Chesapeake Bay Watershed*

- Bay watershed mapping
- Cultural/Historical changes
- Biological profile of Bay / Estuarine Processes
- Present day Bay (human impact, “Global Watershed”, Ecological Footprints)
- Bay eutrophication
- Environmental concern topics (solid waste, energy use, sewage, development, land use, sustainability, endangered species, invasive species, food resources)

**Attendance:** Class attendance is required. Be reminded of the CBGS policy you signed at orientation! Absences and tardies will be reported daily to your home school and will result in parent notification and conferences where necessary. Check my link on the CBGS website for weekly work if you miss a day. You may also call or email me.

### **Make-up/Late Work Policy**

- If you miss a class, it is your responsibility to get all notes and missed assignments.
- Make-up work needs to be completed within 2 days of your return to class. A missed test or quiz must be taken the day you return to class.
- A deduction of one letter grade per day will be assessed to all late work.

**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. All quizzes and tests are pledged.

**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 inform CBGS faculty for appropriate academic adjustments or accommodations.