



CCV Introduction to Environmental Science

Community College of Vermont (CCV)/Spaulding High School

Teacher Contact Information: Guin Fredriksen, 476-4811 ex. 2113, gfredshs@buusd.org

Department Chair Contact Information: Samantha Mishkit, 476-4811 ex.2111, smishshs@buusd.org

Course Description: This course is a multidisciplinary study of the interrelationship between living things and their environment. The fundamentals of biology, chemistry, geology, and energy flow are studied so that current environmental issues can be understood and discussed from a scientific perspective. Emphasis is placed on maintaining and restoring sustainable ecosystems.

Materials / Text: Students are expected to bring a three ring binder, writing utensils, their chromebook and charger to class every day.

- Living in the Environment, 20th edition, by Tyler Miller and Scott Spoolman
 - Textbooks will be provided by SHS. Replacement cost for lost or damaged textbooks is \$97.

Environmental Science CCV Essential Objectives

1. Identify concepts of ecology as they relate to environmental issues.
2. Summarize the foundations of nutrient cycling and energy flow as they relate to the movement of matter and energy within ecosystems.
3. Analyze the impacts of population changes on ecosystems, including issues of human population growth.
4. Identify the role of atmospheric thermodynamics and chemistry as they relate to the biosphere.
5. Analyze the causes and effects of the major pollution issues (including but not limited to: climate change, ocean acidification, eutrophication, acid rain, ozone depletion) and outline strategies to restore ecological balance.
6. Compare and contrast methods, impacts, and sustainability of traditional and alternative energy.
7. Discuss the history behind the creation of public lands in the United States and how scientific discoveries influenced the laws and policies behind the modern environmental movement.
8. Analyze the influence of science, economics, ethics, and culture on environmental management.
9. Evaluate environmental issues and solutions from a global, national, local and personal perspective.
10. Research and establish educational, career, and professional goals related to the field of environmental science.

Course Policies: You are taking this course for college credit, and as such, it is important to build the work habits expected of college students. Therefore, you are expected to adhere to deadlines for work completion. Unless otherwise noted, all work is due in the week it is assigned. Assignments turned in past the due date will lose 10 points for each day they are late. At two weeks past the due date, all assessments and assignments will be locked and may not be completed for CCV credit after that. If you are unable to turn an assignment in on time due to extenuating circumstances you must communicate with me. You are expected to advocate for yourself in this class.

Regular attendance and participation in classes are essential components of a student's success in college and are completion requirements for courses at CCV. Please be aware that missing more than 20% of classes will result in a non-satisfactory grade.

Academic Honesty: CCV has a commitment to honesty and excellence in academic work and expects the same from all students. Academic dishonesty, or cheating, can occur whenever you present -as your own work- something that you did not do. You can also be guilty of cheating if you help someone else cheat. Being unaware of what constitutes academic dishonesty (such as knowing what plagiarism is) does not absolve a student of the responsibility to be honest in his/her academic work. Academic dishonesty is taken very seriously and may lead to dismissal from the College

Classroom Expectations

My expectation is that you will arrive to class with an open mind and help me maintain a respectful learning environment, where people feel safe to ask questions and try new things. We will talk more in class about what respect looks and sounds like.

Personal Electronic Devices Policy: Personal electronic devices, including headphones, must be turned off and put away during class. If you have an academic need to use a personal device, please ask first and be ready to explain what that need is. The one exception is when they are being used as a tool for specific instructional activities. You may listen to music during independent work time as long as it is not distracting you or audible to others. Chromebooks should be brought to class and sufficiently charged daily. Charging Chromebooks during class is not always possible. Chromebooks are for classwork only while in-class.

A Note about Makeups/Extra Help: If you miss class for any reason, it is your responsibility to check the weekly outline for missing assignments. Should you need further support outside regular class times, please advocate for yourself by contacting me about it, and we will work together to figure out the best approach for you. I am here to help, but I want to see you taking responsibility for your work as well.

Learning Tasks: We will be doing weekly learning tasks in the areas of all course standards. While these assignments are formative and only impact final course performance at CCV, they are an integral part of the learning process, and as such will assist the students in their growth as English students. Should students wish to reassess, they will need to show completed learning tasks.

Classroom Habits:

As juniors and seniors, you are expected to conduct yourselves with maturity and respect.

Each student is expected to:

- Show respect for themselves and others (including the classroom and its contents).
- Accept responsibility for one's own learning.
- Make appropriate decisions about breaks and seating.
- Arrive on time and prepared (with appropriate text & materials).
- Put their best effort forward in both individual and group work.
- Complete all assessments (formal and informal) by the decided deadline.
- Follow all school and classroom rules (see Student & Parent Handbook).

Safety in the Science Classroom: All students are responsible for maintaining a safe science classroom. Please read and sign the provided [science safety contract](#). A copy of these safety rules is available on the google classroom for your reference.

***NO PEANUT OR TREE NUT PRODUCTS ARE ALLOWED IN CLASS!**

Evaluation Criteria: You will be evaluated on your general mastery of the Essential Objectives for the course, level of participation, and overall quality of work (including written mechanics). In particular, I will be using the following areas to evaluate your work:

- Active Participation in class discussions and activities (15%)
- Homework and Learning Tasks (20%)
- Projects, Papers and Presentations (25%)
- Quizzes and Exams (25%)
- Final Research Project (15%)

- [Grading Criteria: For CCV Grade/Transcript](#)
- Grades will be recorded and viewable through Canvas, the online platform used at CCV. Grades will not be updated in Infinite Campus.

Weekly Outline: The high school calendar has many nuances such as half days and partial weeks during the semester. The following outline does not represent calendar weeks instead it is an outline of the 16 full weeks contained within the semester calendar. A detailed weekly Learning Outline will be posted at the start of each calendar week with detailed daily agendas for that school week.

Week 1: Introduction to Environmental Science

- Chapter 1: The environment and sustainability
 - o Key Vocabulary
 - o Reading Questions & Discussion
- Tragedy of the Commons Activities & Discussion
- Ecological Footprint Analysis

Week 2: Earth as a System

- Chapter 2: Science Matter, Energy, and Systems
 - o Key Vocabulary
 - o Reading Questions & discussion
- Scientific method and data analysis lab
- Earth as a system and Biosphere 2 Activity

Week 3: Ecosystems - Matter and Energy Cycling

- Chapter 3: Ecosystems: What are they and How do they work
 - o Key Vocabulary
 - o Reading Questions & discussion
- Schoolyard Ecosystem Activities
- Food Web Analysis Owl Pellet Lab

Week 4: Ecosystem- Biodiversity

- Chapter 4 (part): Biodiversity & selected readings
 - o Key Vocabulary
 - o Reading Questions & discussion
- Backyard Biodiversity Inventory
- Ecosystem presentations

Week 5: Ecosystems - Sustaining Biodiversity

- Chapter 9: Sustaining Biodiversity: Saving Species and Ecosystem Services
 - o Key Vocabulary
 - o Reading Questions & discussion
- Classroom activities & labs

Week 6: Water Resources

- Chapter 8 (Partial): Sustaining Biodiversity: Saving Species and Ecosystem Services
- Chapter 13: Water Resources
 - o Key Vocabulary
 - o Reading Questions & discussion
- Water footprint activity

Week 7: Water Pollution

- Chapter 20: Water Pollution
 - o Key Vocabulary
 - o Reading Questions & discussion
- Water Quality Lab
- Vermont Water Quality Inventory

Week 8: Agriculture and the Environment

- Chapter 12: Food Production and the Environment
 - o Key Vocabulary
 - o Reading Questions & Discussion
- Comparing Soils lab
- Sustainable Ag project

Week 9: Nonrenewable energy & Renewable Energy

- Chapter 15: Nonrenewable Energy
- Chapter 16 (part): Renewable Energy
 - o Key Vocabulary
 - o Reading Questions & Discussion
- Classroom activities & labs
- Renewable Energy Presentations

Week 10: Air Pollution & Human Health

- Chapter 18: Air pollution and Ozone Depletion
 - o Key Vocabulary
 - o Reading Questions & Discussion
- Air quality lab

Week 11: Air Pollution & Climate Change

- Chapter 19: Climate Change
 - o Key Vocabulary
 - o Reading Questions & Discussion
- Climate Change Lab
- Climate Change Reduction research

Week 12: Hazardous Waste & Human Health

- Chapter 21: Solid & Hazardous Waste; Selected readings
 - o Key Vocabulary
 - o Reading Questions & Discussion
- Classroom activities & labs
- Final Research Project Proposals

Week 13: Urbanization and Sustainability

- Chapter 22: The environment and sustainability
 - o Key Vocabulary
 - o Reading Questions & Discussion
- Tragedy of the Commons Activities & Discussion
- Classroom activities & labs

Week 14: Economics, Politics and Environment Sustainability

- Chapter 23 (part): The environment and sustainability
- Chapter 24: Politics, Environment, and Sustainability
 - o Key Vocabulary
 - o Reading Questions & Discussion
- Tragedy of the Commons Activities & Discussion
- Ecological Footprint Analysis

Week 15:

- Chapter 25: Environmental Worldviews, Ethics, and Sustainability
 - o Key Vocabulary
 - o Reading Questions & Discussion
- Careers in Environmental Science Research & Discussion

Week 16: Final Projects and Course Wrap up

- Project feedback and revisions
- Project Presentations
- Final Reflections