



SHS AP Environmental Science (APES)

Course Syllabus Room D303

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Everett Community College College in the High School: This course qualifies for EvCC's College in the High School Program (CHS). Students seeking to earn college credit must enroll in the EvCC CHS program. Program processes and deadlines can be found at www.everettcc.edu/chs

Course Description: AP Environmental Science (APES) is a one-year course that examines the relationships between earth's systems and the effects of human interactions with these systems. This is an interdisciplinary subject that uses the students' prior knowledge of biology, chemistry, and physics. The topics covered in this course will include:

- Ecology/Ecosystems/Biodiversity
- Earth systems: weather, basic geology, ocean currents
- Cycling of matter Land/Air/Water
- Energy flow
- Resource management
- Human population growth and dynamics
- Environmental quality & Pollution: Land/Air/Water
- Global Climate Change
- Environment and society: Trade-offs and decision making.

Course Objectives: The goal of APES is to provide the students with the knowledge and skills necessary to understand the interrelationships of the natural world, to identify environmental problems both manmade and natural, and to examine solutions to resolving these issues. The following themes serve as the structure for AP Environmental Science.

1. Science is a process providing a methodology for examining and understanding the world.
2. Energy conversions underlie all ecological processes. Energy cannot be created or destroyed. As it flows through a system its quality is degraded.
3. The Earth is one large interconnected system. These systems change over time.
4. Humans alter the natural systems through technology and population growth.
5. Environmental problems and their solutions involve social, cultural and economic factors.
6. Human survival depends on the ability to develop sustainable systems to support the human population.

Student responsibilities: The students are expected to read on their own, take reading notes, do internet research on current environmental issues, write meaningful arguments to support their views on the topics covered in class, participate in class discussions, and complete all assigned projects and reports.

Course Outline:

First Semester

Unit One: Science Essentials

Chemistry (atoms, ions, pH, chemical reactions, isotopes, radioactive decay, properties of water), Biology (photosynthesis, respiration, macromolecules), Physics (electromagnetic radiation, thermodynamics)

Unit Two: Earth's Systems

Basic geology, plate tectonics, atmosphere composition, ocean currents and global climate patterns, nutrient cycling, soil

Unit Three: The Biosphere

Ecosystems, energy transfer, population growth and carrying capacity, community ecology and interspecies interaction, biomes, niches, natural selection, evolution, and extinction

Unit Four: Human Population

Population growth, demographic transitions, age-structure diagrams, poverty, health and disease, zero growth

Second Semester:

Unit Five: Natural Resources and Management

Water resources, land use, conservation, food production, GMOs, forestry, fisheries

Unit Six: Energy Resources

Petroleum, coal, natural gas, hydroelectric, nuclear, alternative sources (wind, solar, geothermal), costs and associated problems, energy efficiency

Unit Seven: Pollution

Water pollution, point/nonpoint sources, air pollution, solid waste, treatment and management, recycling

Unit Eight: Sustainability and the Future

Technology, geoengineering, city planning, the future

This class follows the AP Environmental Science Course & Exam Description published by the CollegeBoard AP.

<https://apcentral.collegeboard.org/media/pdf/ap-environmental-science-course-and-exam-description.pdf>

Each of our 9 Units will include

- 1 CollegeBoard Formal lab (25% of your grade)
- 1 Exam comprised of 30 Multiple choice questions & 1 FRQ (60% of your grade)
- Multiple small labs and classroom activities/discussions/projects (15% of your grade)

Grading: Students grades are based on an accumulation of points earned from tests and quizzes, position papers, lab reports, presentations, and projects.

A = 94% to 100%	B = 83% to 86%	C = 73% to 76%	D = 65% to 66%
A- = 90% to 93%	B- = 80% to 82%	C- = 70% to 72%	F = 64% and below
B+ = 87% to 89%	C+ = 77% to 79%	D+ = 67% to 69%	

Text Book:

Environmental Science for the AP Course Third Edition. By Andrew Friedland & Rick Relyea

Extra Help: All students will be provided opportunities for extra help by making arrangements with the teacher. I am very available. Before school, after school and Panther period...

Behavior: The two main expectations are **SAFETY** and **REPSECT**. Be safe while conducting labs. Treat the instructor, your peers and yourself with respect.

Labs: You will conduct labs with a lab partner, and you may turn in partner lab reports **as long as submission procedures are exactly followed (no duplicate submissions to Canvas)**. Expect a Lab Practical Quiz on days labs are due. Your quiz will mirror the content of your lab so that you may demonstrate your understanding of the content. Lab make ups are available through the next 2 panther periods for each lab, after that, chemicals will be disposed of and the lab will no longer be available for make ups. Bottom line, come to class – we do a lot of labs!

Cell Phones: Cell phones and other personal connected electronic devices (ear buds) will be turned off and put away while in class. Students will not use their cell phones while taking restroom breaks. Parents can be in contact with students during passing periods and lunch. The school cellphone policy (please refer to the student handbook) is followed in this class.

Plagiarism Policy: Any student, who knowingly turns in any work that has been done by someone other than himself or herself, and fraudulently represents it as his/her own, shall be considered to have cheated. Cheating also includes: aiding someone else in cheating, the use or preparation of written, pictorial, or other materials not authorized by the instructor during a test or assignment, the use of testing materials obtained previous to the test date, or plagiarism of any kind. Consequences will be discussed between student, teacher, and parents. Disciplinary actions outlined in the student handbook will be followed.

Homework: Homework should be completed in PENCIL & you should **always** include your work. Expect no credit when work is not shown. After you have completed a homework assignment and before the due date, an answer key will be available in class for you to check your work. If at any time you have questions you can ask Mrs. Hesselgrave for help or to go over a problem. Expect no credit for work turned in after the due date. Assignments are due at the start of class. After that time they are considered late. Questions directly from the HW will appear on the exam. Do your HW! Suggested problems from the textbook will be given for each unit of study. The answer key is always available in class. Several suggested problems will appear on each unit exam. Do the suggested problems!

Attendance: Attendance is important for success in a lab class. Students who miss class, often miss information and work that cannot be made up. As a result, students who miss class generally fall behind and their grade suffers. I follow the school's policy on absences and make up work. You have as many days as you were absent to make up the work/lab/test you missed. I will not track you down to make up this work, it is **YOUR** responsibility. If you fail to make up the work in the amount of time you are allowed as per school policy, your missing work will remain a zero. If you are absent the day of a test, you will take the test the next day you are in class – missing new material that you will need to make up. **Missing assignments/assessments due to an unexcused absence cannot be made up and will remain a zero.**

Late Work: No credit will be earned for late work. Ample time is given for HW and LABs. I NEVER assign something today and its due tomorrow. You typically have a week or more. Plan accordingly. If you miss a deadline, it is important that you still turn in the assignment so that you have no missing assignments and can earn extra credit the last day of the semester (see below). Because life happens, you are given 3 late work passes each semester. These passes allow you to turn in your work ONE DAY late for full credit. Late work passes must be filled out completely and attached to the assignment when turned in the NEXT day for you to earn credit. Use these passes wisely. They are nontransferable. Unused passes are worth extra credit the last day of each semester. First Semester Passes DO NOT carry over to 2nd Semester.

Changes to the Syllabus I have attempted to make this syllabus as comprehensive and accurate as possible and I may occasionally need to make small adjustments during the quarter. I will announce any changes in class or notify you in writing.

***2025 addendum:**

College in the High School:

Students have the opportunity to earn **5 ENVS&101 credits via EvCC**. Signups will occur this spring. Integrated into the College Board APES requirements, the following EvCC learning objectives will be met in this class:

Student Learning Objectives: Upon successful completion of this course, students will be able to:

1. Design a scientific experiment that conforms to the scientific method.
2. Describe the structure and function of the ecosystem components.
3. Describe how energy moves through an ecosystem.

4. Describe the interactions among species in an ecosystem.
5. Describe nutrient cycling in ecosystems.
6. Describe the main tenets of biological evolution.
7. Describe biodiversity, threats to global biodiversity, and implications and practical solutions.
8. Describe the advantages and disadvantages of recent model systems for conservation.
9. Describe models of population growth and how they relate to natural populations.
10. Measure environmental variables and interpret results.
11. Demonstrate competence in using simple field instruments.
12. Present information in written and oral form.

Core Learning Outcomes:	Outcome measured via:
Engage and take responsibility as active learners	Students will participate in group projects and discussions that explore and reinforce environmental topics and concepts.
Think critically	Students will apply scientific methodology to evaluate, discuss, and reach conclusions regarding current research problems involving environmental issues
Communicate effectively	Students will communicate the results of their group projects and assignments in written reports and oral presentations.
Critically evaluate the science-related content in reports, popular media and public policy.	Students will read assigned articles, books and online resources, and evaluate these sources in the context of the environmental topics presented in class.
Effectively communicate scientific processes.	Students will use the results obtained from projects, demonstrations and discussions to produce written reports and oral presentations

EvCC Support for Students

Equity and Accessibility

Everett Community College through its Vision, Mission, and Strategic Plan, has made an institutional commitment to establish a diverse, equitable and inclusive working and learning environment. My goal is to create a classroom environment in which everyone can participate and learn. Because of the diversity of backgrounds, experiences, and beliefs all of us bring to this class, I expect you to interact with your peers in a spirit of generosity, mutual respect, and understanding.

If there are aspects of this course that prevent you from learning or that exclude you, please speak with me as soon as possible. Together we can develop strategies to meet both your needs and the requirements of this course. I am happy to talk privately after class or during my office hours.

By enrolling in this course for both high school and EvCC college credit students are eligible to obtain additional student support services, see below. If a student wishes to take advantage of these services please request through me, as your teacher and I will facilitate your connection to the college service.

- Counseling and Student Success College is an exciting and unique time in our lives. It can also bring a great deal of stress from things like family problems, academic expectations, financial responsibilities and relationships. It is important that we all take care of ourselves and that we know where to turn for help. Please know that there are resources available right here on our campus. EvCC Counselors can assist with career counseling, academic/educational counseling, advising, and referral to community mental health resources. Parks 3rd Floor – 425-388-9263
- Library Information and services to support research and learning including books, media materials, and databases. Librarians assist students in locating information and developing research skills. Parks 1st floor – 425-388-9353 (checkout) and 425-388-9354 (reference assistance)
- Tutoring Center Free academic/tutorial support with course material, study skills, time management, and preparation for exams Rainier 119 and Baker 112 – 425-388-9356 • Writing Center Peer writing assistants offer feedback, ideas, and methods for editing and polishing work. Gray Wolf 150 – 425-388-9406
- For additional support services, visit the Everett Community College Student Resources website.

General Information about EvCC Policies and Procedures

As an EvCC students you are expected to know and adhere to all college policies.

As outlined in the campus civility statement, Everett Community College is committed to providing a safe learning and working environment. The expectation is that all students will conduct themselves in a civil, respectable and appropriate manner as a responsible member of the college community. The Student Rights and Responsibilities Handbook identifies and describes college expectations, students' rights, and outlines the process for resolving disciplinary matters, including Student Code of Conduct violations. The provisions of the Student Code of Conduct apply to all students whenever they are on the college campus, in college housing, or engaged in college-sponsored activities and functions.